

**CONSULTATION
FOR
TRAUMA SYSTEMS**

**MONTANA SITE VISIT
JULY 18-20, 1999**

**MONTANA EMS AND
INJURY PREVENTION
SECTION**

**MONTANA DEPARTMENT OF PUBLIC HEALTH
AND HUMAN SERVICES**

FINAL VERSION 8/24/99

Montana Trauma System Evaluation Table of Contents

A.	Administrative Components	3
	1) <i>Leadership</i>	3
	2) <i>System Development</i>	7
	3) <i>Legislation</i>	12
	4) <i>Finances</i>	15
B.	Operational and Clinical Components	18
	1) <i>Injury Prevention and Control</i>	18
	2) <i>Human Resources</i>	22
	a) <i>Workforce Resources</i>	22
	b) <i>Education</i>	25
	3) <i>Pre-hospital Care</i>	28
	a) <i>Emergency Medical Services Management Agency</i>	28
	b) <i>Ambulance and Non-transporting Medical Unit Guidelines</i>	31
	c) <i>Communications Systems</i>	36
	d) <i>Emergency / Disaster Preparedness Plan</i>	40
	4) <i>Definitive Care Facilities</i>	41
	a) <i>Trauma Care Facilities</i>	41
	b) <i>Inter-facility Transfer</i>	47
	c) <i>Medical Rehabilitation</i>	50
	5) <i>Information Systems</i>	53
	6) <i>Evaluation</i>	57
	7) <i>Research</i>	62
C.	Appendices	

Note: The Appendices are included with this final document. The Appendices are numbered sequentially just as they were sent from the State of Montana. The State began numbering them with Page 28 and the last page number is 190.

Provide an explanation for each affirmative response. For each negative response, provide an explanation for the system's plan to comply.

<p>A. Administrative Components 1) Leadership 1. What is the organizational structure of the lead agency, including reporting requirements?</p>
<p>The Emergency Medical Services and Injury Prevention Section (state lead agency) is located in the Montana Department of Public Health and Human Services. An organizational chart is included in appendix 8.</p> <p>Reporting requirements: Yearly report to the legislature regarding trauma care system implementation. (The reporting requirement question is not clear)</p>
<p>CURRENT STATUS: The State of Montana has established, through adopted Statutes, a Lead Agency for trauma system development within the Emergency Medical Services and Injury Prevention Section of the Department of Public Health and Human Services. The State Lead Agency reports to the Department of Public Health for policy direction and administration oversight. The Statutes are broad enough to allow for the development and implementation of a statewide trauma system.</p> <p>The structure is appropriate for the function of developing a system, allowing for system refinement and operational guidance to be developed in Administrative Rules. The single missing component is a financing plan to ensure system integrity.</p> <p>RECOMMENDATIONS:</p> <ul style="list-style-type: none"> No recommendation is made to the Lead Agency component of trauma legislation. <p>RATIONALE FOR RECOMMENDATIONS:</p>
<p>A. Administrative Components 1) Leadership 2. Is there a Trauma System Advisory Committee? Who is on the committee (what groups are represented)? What are the goals and objectives of the committee? If the committee has met, what has it accomplished to date? What are the authority, responsibility, and reporting requirements of the committee?</p>
<p>See Organizational Charts in Appendix 8, statutes Appendix 1.</p> <p>The State Trauma Care Committee is statutorily created and consists of members appointed to 4-year terms by the governor. Voting membership includes:</p> <ul style="list-style-type: none"> a member of the Montana committee on trauma of the American college of surgeons, who serves as presiding officer of the committee two members from each regional trauma care advisory committee created pursuant to 50-6-411; a member of the Montana trauma coordinators a representative of the Montana Hospital Association a member of the Montana Medical Association; a member of the Emergency Nurses Association; an individual who is or who is employed by a Montana Private Ambulance Operator; a member of the Montana Emergency Medical Services Association; a nurse or physician representing the INDIAN HEALTH SERVICE; and a member of the American College of Emergency Physicians, Montana chapter.

The authority, responsibility and reporting requirements of the State Trauma Care Committee are outlined in MCA 50-6-404:

The State Trauma Care Committee meets quarterly in Helena, Montana. Duties of the committee are to:

- provide recommendations and guidance to the department concerning:
 1. trauma care, including suggestions for changes to the statewide trauma care system;
 2. the implementation of a hospital data collection system; and
 3. the design and implementation of a statewide and regional quality improvement system for trauma care that considers the standards recommended by the American college of surgeons and the joint commission on accreditation of healthcare organizations;
- assist the department in conducting statewide quality improvement and peer review functions by regularly analyzing the effect of the statewide trauma care system on patient care, morbidity, and mortality;
- provide recommendations to and oversight and coordination of the activities of the regional trauma care advisory committees; and
- provide recommendations to the Emergency Medical Services Advisory Committee concerning the statewide trauma care system and the integration of trauma care with the emergency medical services delivery system.

To date the STCC has:

1. Developed a state trauma system plan
2. Participated in a Quality Improvement Workshop
3. Assisted in drafting Trauma System Quality Improvement Plan
4. Developed an outline for RTAC report to the STCC
5. Started to draft a System Trauma Register Data Request Policy
6. Drafted Montana Trauma Systems Plan Facility Standards
7. Developed a Trauma facility designation process
8. Developed draft Trauma System rules
9. Awarded RTAC Educational Projects
10. Completed the Annual Trauma System Report – 1998
11. Appointed members of committee to look into trauma patient repatriation
12. Adopted a plan for coordination of the state Injury Prevention program into the trauma care system

Additionally, our state legislation provides for **Regional Trauma Advisory Committees. 50-6-411. Regional trauma care advisory committees.**

Each trauma facility designated by the department pursuant to 50-6-410 shall appoint one representative to a regional trauma care advisory committee for the region in which the facility is located. Each representative has one vote. Meetings are open to the public for comment.

50-6-412. Duties of regional trauma care advisory committees. A Regional Trauma Advisory Committee shall:

- Establish standards, policies, procedures, and protocols for the regional trauma care system;
- Conduct regional trauma care quality improvement, including receipt of reports prepared by the department containing trauma care data and making recommendations to trauma care facilities within the region based upon those reports;
- Advise the trauma care committee concerning the statewide trauma care system;

- Establish trauma education and injury prevention programs;
- Provide advice concerning trauma care to health care facilities and other providers of health care;
- Perform other duties required by department rule; and
- Conduct other activities needed to ensure optimal delivery of trauma care services within the region.

Each RTAC meets quarterly and a representative from the RTAC provides a report on RTAC activities at the STCC meeting.

To date the RTCCs have:

1. Developed subcommittees in areas of Policies and Procedures
 - Regional trauma flow sheets
 - Regional flight transfer protocols and flowsheets
 - Regional distribution and exchange of trauma medical supplies with low turnover rates (i.e. chest tube autotransfusion devices, trauma IV tubing)
2. Developed and supported Trauma Educational offering in each region
 - Regional Trauma Education for Rural Nurses Classes and Trauma Nurse Core Course, regional PHTLS, etc.
 - Assessed needs and developed educational programs for the STCC educational mini-grant activities
 - Provided physician education during quarterly RTAC meetings
3. Supported Regional Injury Prevention activities in each region
4. Quality Improvement
 - Participated in statewide discussions regarding RTAC responsibilities in quality improvement activities, specifically case review at the RTAC level.
 - Identified regional quality indicators from Trauma Register data and provided education to improve data collection
 - Participated in case study review during RTAC meetings.

CURRENT STATUS:

Within the Statutes for trauma system development, there are a number of advisory groups. At the State level there is a State Trauma Care Committee (STCC) comprised of a multidisciplinary panel of stakeholders reporting through the State EMS Advisory Council. The Committee has met to draft or review plans necessary for system development, including a trauma care plan, injury prevention, and quality improvement plan. In addition, the Committee is drafting policies for a hospital designation process, facility standards, and has completed an annual Trauma Report for 1999. The STCC is presently working on the development of Administrative Rules for trauma system operations and management.

The Statutes also make provisions for Regional Trauma Care Advisory Committees (RTAC) appointed by the designated facilities within the region. The RTAC have been working to develop regional policies and procedures for system operations at the local and regional level, including participating in regional trauma education and injury prevention efforts.

RECOMMENDATIONS:

- Broaden the base of the advisory groups to include elected officials, public and consumer groups and representatives from surgical services and rehabilitation.

RATIONALE FOR RECOMMENDATIONS:

While the State Trauma Committee represents many trauma stakeholders, it lacks representation from elected officials, the public, consumer groups such as MADD, and

surgery subspecialists and rehabilitation services. Although the review team considers the advisory structure a strength, it could be enhanced with representation from other non-traditional groups giving it a broader base for input and analysis. The same rationale holds for the Regional Advisory Committees. These groups have the potential to be even more isolated in that their membership comes from the hospitals within the region. If the trauma system should be seen as a regional and State benefit, it will need grassroots efforts to support system implementation, fund raising and other activities. A broader constituency group, knowledgeable about the trauma system at both the State and local level will enhance overall efforts in system development.

A. Administrative Components

1) Leadership

- 3. Does the lead agency have a Trauma Medical Director?
Are there plans to have a Trauma Medical Director in the future?**

No. A Trauma Medical Director role will be evaluated if funding for the Trauma System is secured. Currently we are able to utilize physicians in either the EMS Advisory Council Medical Direction Subcommittee or the State Trauma Care Committee to perform these duties.

CURRENT STATUS:

There is no State Medical Director for either Trauma or EMS. There is no budget for a Medical Director for Trauma and no plans exist to fund this position in the near future. The system relies on the Subcommittee of the EMS Advisory Committee to provide medical oversight to the EMS Section and Department. The Chairs' of the State Advisory Committees are trauma physicians, and apparently, are able to provide medical leadership for system development.

RECOMMENDATIONS:

- Continue with the current program, as it appears to be working. If at a future time the legislation is updated, consider adding a part-time EMS/Trauma Medical Director with appropriate funding to support the position. Another consideration would be to include a Medical Director position within the EMS Section should additional funding become available.

RATIONALE FOR RECOMMENDATIONS:

The State of Montana has relied on physician volunteers to provide medical leadership. It is a testament to the leadership of the EMS Section, and to the commitment of area physicians within the State, that this system is able to function well. The review team has made no recommended changes at this time, however, recognizes the value and necessity of strong medical direction in the development of the trauma system and would encourage the State to continue to monitor and insure active physician involvement. At some point in system development, the need for a Physician Advisor may be necessary and the State should anticipate meeting that need in the future.

A. Administrative Components

1) Leadership

- 4. What are the roles and responsibilities of the Trauma Medical Director?
What are the qualifications of the Trauma Medical Director?
What is the authority for the Trauma Medical Director?**

Although we do not have a Trauma Medical Director, this issue was discussed during Task Force meetings in 1992-3 and a job description for a Trauma Medical Director was formulated. The State Trauma Care Committee will have to reassess the job description, roles and responsibilities, and authority for medical direction prior to our legislative efforts in 2001.

CURRENT STATUS:

The State has prepared a draft job description for a Trauma Medical Director. However, as previously stated, a Medical Director position is not funded at this time and the use of physician volunteers is relied upon to provide medical direction and oversight. The current Statutes mandate that medical involvement be present.

RECOMMENDATIONS:

- None

RATIONALE FOR RECOMMENDATIONS:

Refer to A.1.3. for discussion of Medical Director issues.

A. Administrative Components

1) Leadership

- 5. Is there a trauma system administrator with expertise in trauma system development and implementation? Are other trauma system support resources (equipment and personnel) available for trauma system implementation and planning?**

Susan Werner, RN, BSN, MAS is the Trauma System Coordinator; her salary is paid by a federal CDC trauma grant. Ms. Werner has previous experience in trauma system development and implementation, and has had a varied nursing background in the areas of Emergency Nursing, Trauma Coordinator, Discharge Planning and Utilization Review, and Emergency Department Management. Her Curriculum Vitae is found in appendix C. Jim DeTienne provides assistance in implementing the trauma register, meeting with STCC and with RTACs, and in providing overall technical assistance. Jim's salary is paid with State general funds.

CURRENT STATUS:

The system is fortunate to have a strong Trauma Administrator/Nurse Coordinator who has both clinical skills and trauma system expertise. The Nurse Coordinator's position is funded through a grant, and other personnel within the EMS Section have been assigned additional duties related to trauma system development. The trauma office has relied almost totally on grant support for planning and development of system components. No permanent personnel have been allocated within the State's EMS Section budget for trauma system development.

RECOMMENDATIONS:

- Provide within the State EMS Section a permanent Trauma Nurse Administrator position.
- Provide for additional support personnel (clerical, registrar) and equipment to adequately carry out the planning, implementing, and reporting components of system development.
- Fill EMS Section Supervisor position with a leader in EMS and trauma system development.
- Obtain stable funding for trauma system development.

RATIONALE FOR RECOMMENDATIONS:

The State has a responsibility to plan, implement, administer and oversee the development of a trauma care system. This responsibility has been clearly laid out in Statutes. In order to accomplish the goals identified in the Statutes, the State must assume its responsibility for planning, implementation, and regulation. This can only be accomplished when sufficient personnel have been appointed and equipment identified to ensure system integrity. While the State meets this challenge through the use of temporary personnel funded with grant monies, it has not made provisions for dedicated trauma personnel in sufficient numbers to plan and implement the system envisioned in the legislation. The State is to be commended for its success in seeking and securing grants to plan for the trauma system in Montana. But grants do not provide a stable environment for personnel, and the temporary nature of grants puts the current personnel and system at risk.

A. Administrative Components

2) System Development

- 1. Has the trauma system completed a needs assessment and identified appropriate trauma system resources?**

Robert Heilig and Associates conducted a mail survey and on-site survey of healthcare facilities and EMS services in 1992-3. This information was used as a basis to develop the Montana State Trauma Plan. We have not planned a follow-up needs assessment at this time.

CURRENT STATUS:

The State last completed a needs assessment in 1992-93 through a grant-funded project with Heilig and Associates. The needs assessment was initially used to identify resources within the State including facilities, personnel, and equipment. The survey of resources has not been updated and there are no current plans to categorize resources within the State for the provision of trauma care at this time.

RECOMMENDATIONS:

- Using the regions as the focal point for data collection, conduct a follow-up survey of community resources available for trauma.

RATIONALE FOR RECOMMENDATIONS:

The Review Team did not feel it was necessary to repeat a formal needs assessment, however, there may be geographical areas where resources have changed (more physicians available, less hospitals available, etc.). In order to implement the regional trauma system, the regions need to "map assets" to identify areas of strengths and weaknesses, including transport capabilities, facility resources, etc. Therefore, the team felt that it would be beneficial to re-evaluate the original survey findings to determine if they can be used to assist regions to identify resources in their area.

A. Administrative Components

2) System Development

2. Does a process exist for setting realistic time frames for implementing each component of the system?

We do not have a long-term implementation timeline for the trauma system. However, we have utilized our Trauma Grant objectives as a template for trauma system development. The EMS and IP Section recently completed QI training, and are implementing the QI process to prioritize goals and objectives for the EMS and Trauma System. Absence of dedicated funding has made long-term planning substantially more difficult.

CURRENT STATUS:

The ability to do long-range planning, system integration of each trauma component in a continuum of trauma care has not been realized. The State's planning for a trauma system has spread over many years. In general, planning is contingent on the State's ability to secure additional grant funding. The ability to secure grant funding to do trauma system planning is to be commended and has enhanced the planning efforts accomplished to date. However, grants have not allowed the State to do consistent, ongoing planning such that realistic timeframes for implementing each component of the trauma system could be achieved. The reliance on grants rather than State funding has impeded the development of the trauma system.

RECOMMENDATIONS:

- Update the current trauma plan with realistic timelines for trauma system development and implementation.
- Decrease reliance on grant funding for essential trauma system component development and implementation.
- Secure stable long-term State funding for the trauma system in Montana.

RATIONALE FOR RECOMMENDATIONS:

The ability to do long-range planning and trauma system enhancements over time is contingent on stable funding, well-developed regional and State plans, and a commitment to getting the task done. The State EMS Section and their constituency groups have had the commitment, and the State has secured the grants. The missing piece is a commitment to long-term funding and sufficient personnel to carry out the duties of

planning and establishing trauma system milestones. The State's ability to get grant funding has in some ways been a detriment to fully developing the trauma system. Grants have given the State the opportunity to plan and implement many components of the system, but in return, those grants have limited the capacity to obtain stable funding for trauma system development. In a developing trauma system, both avenues of system support have to be present; stable funding from the State and the ability to enhance and enrich service through the use of grants. This then results in the ability to do long-range planning and to set realistic timeframes for implementing each trauma system component.

A. Administrative Components

2) System Development

3. Is there a process to build a constituency group and involve pre-hospital/hospital and other health professionals and consumer groups in planning, developing and supporting the trauma system?

During early efforts in trauma system development, an Ad Hoc Task Force was organized to assist in the planning and development of the trauma system. The State Trauma Care Committee evolved from this task force and, in conjunction with the Regional Trauma Advisory Committees, play a major part in the planning and development of the trauma system. There is a defined relationship between the state trauma care committee and the regional trauma advisory committees. There is limited consumer and public representation on either the STCC or RTACs. Only representatives from medical facilities compose the RTACs, but these members can be anyone from surgeons to pre-hospital care providers.

CURRENT STATUS:

The Statutes in Montana articulate the role for Advisory bodies. Both the State Trauma Care Committee and the Regional Trauma Care Committee have a cross section of stakeholders representing differing trauma care providers. There is no role for the public or consumer groups. There is a direct relationship between the regional committees, the State Trauma Committee, and the EMS Advisory Council.

RECOMMENDATIONS:

- Expand the membership in both the State Trauma and Regional Trauma Care Committees to include a broader constituency group. Groups to consider for membership include, but are not limited to, consumer and advocacy groups (spinal cord injury foundation), elected officials (Board of County Commissioners or Supervisors, State Legislator), insurance providers (HMO, Blue Cross), and community benefactors or industry leaders.

RATIONALE FOR RECOMMENDATIONS:

A broad based group of advocates helps to solidify the system in the State, brings funding opportunities and assists with legislative efforts as needed. Taking advantage of the power constituents bring to trauma system development, helps to develop the system. Consumers not directly tied to the provision of trauma care, can provide that grassroots effort and community education needed to complete and enhance the system during development and over time.

A. Administrative Components

2) System Development

4. Have appropriate trauma care guidelines and system standards of care been developed or adopted, including trauma policies, procedures and protocols?

The development of trauma care guidelines and policies for trauma activation and inter-facility transport are included in our current trauma grant work plan. They are not currently completed.

CURRENT STATUS:

The draft Trauma Administrative Rules are in the process of Committee review. This activity is funded under the current grant and the State anticipates that the State Trauma Care Committee will begin discussing this draft at their next meeting.

RECOMMENDATIONS:

- **Maintain, as a high priority, completion of the Trauma Administrative Rules through the system and final approval.**
- **Ensure that the Trauma Administrative Rules include a mechanism to develop a retrospective definition of the trauma patient, prospective triage guidelines at the regional level, transfer guidelines to move patients to the appropriate level of care, including definitive care and repatriation, and related trauma, triage, treatment or transfer policies having a statewide significance.**

RATIONALE FOR RECOMMENDATIONS:

The State as the Lead Agency has the responsibility to lead. As such, the rules for trauma system expectations, operations and outcome should be standardized within the regulations. The process by which the State puts into practice the Statutes adopted by the Legislature is through rule making; essentially the operational guidance to develop and implement the system. The rules should be well defined and the myriad of overarching policies should have a statewide impact. There are certain system components that must be refined at the local or regional level. The State's role, however, is to provide guidance and direction to regions so that local policies can be developed, implemented and approved.

A. Administrative Components

2) System Development

- 5. Is the trauma system integrated with the EMS system?
With mass casualty and disaster response systems?
With managed care programs?**

The trauma program and the EMS program are both located in the EMS and Injury Prevention Section of the Department of Public Health and Human Services. The chairperson of the State Trauma Care Committee serves on the State EMS Advisory Council. Within the Department of Public Health and Human Services, the EMS and Injury Prevention Section is responsible for coordination of the Health and Medical Annex of the State Disaster Plan. The EMS Section Supervisor serves as the federal Regional 8 designee for the medical aspects of disaster management. However, the department is just beginning to work on the statewide protocols for the medical and health aspects of disaster management. This is not well developed at this time nor is the relationship with the trauma system delineated.

Managed care has seen minimal penetration in Montana and we have made minimal effort to integrate managed care with the EMS system. The Medicaid managed care program is located in the same division as the EMS and Injury Prevention Section. While there exists good potential for coordination with Medicaid managed care; these discussions have not yet been initiated.

CURRENT STATUS:

Responsibility for trauma system development is that of the EMS and Injury Section of the State Department of Public Health and Human Services. Having the trauma program within this unit allows for its integration with EMS. The Advisory Committees are also linked, providing additional opportunity for system integration.

There is, at the State level, a Medical Annex to the State Disaster Plan, and the EMS Section Supervisor serves as the regional designee for statewide medical disaster management. There may also be medical disaster plans at the local level. Mass casualty, multipatient incidents are handled at the local or regional level. The plans for handling these occurrences vary and have not been assimilated into the regional trauma planning efforts.

Managed care has not been integrated as yet into the trauma system planning process.

RECOMMENDATIONS:

- **Consistent integration principles of development between trauma and EMS services need to continue and be expanded.**

- Expand and develop mass casualty care developed on a local and regional level, integrating it with the statewide and Regional Trauma System.
- Make disaster management a formal agenda item at the State level to encourage development of processes to handle large-scale incidents crossing multiple jurisdictions.
- Continue to follow the development of managed care systems and incorporate into the planning process as necessary.

RATIONALE FOR RECOMMENDATIONS:

A strong, integrated approach to trauma system development will enhance the State's capacity to effectively address issues that cross multiple jurisdictions and affect the different levels of trauma care resources.

A. Administrative Components

2) System Development

- 6. Does the trauma system have a mechanism to integrate managed care entities in the area?**

No.

CURRENT STATUS:

Managed care has not been an issue in Montana to date.

RECOMMENDATIONS:

- N/A

RATIONALE FOR RECOMMENDATIONS:

A. Administrative Components

2) System Development

- 7. How have the incentives changed within the trauma system? Specifically, do you have a mechanism to assess the changes and incentives (risks and benefits) in caring for trauma patients?**

How has managed care affected reimbursement for trauma care?(move up to A26)

Are there incentives for caring for trauma patients?

What are the incentives for hospitals? For physicians?

Unfortunately, the Montana trauma system is unfunded, and monetary incentives are unavailable at the present time. The Trauma Register that is utilized in many of our facilities allows us the potential to assess reimbursement issues. However, not all facilities are willing to upload financial information to the State Trauma Register. Because of the rural nature of our state and the minimal penetration of Managed Care (especially HMO's) in our system, managed care organizations within the state are most cooperative in allowing facilities to provide optimal care without restricting access.

A bigger issue is the % of no-pay patients – as high as 55% (information generated with the Trauma Register) in one of the larger facilities. If, after we get legislative funding, we were able to reimburse for uncollected billing, it would be a great incentive to full participate in the system. The Trauma Registry may become the focal point for risk/benefit and reimbursement issues.

CURRENT STATUS:

The system is not far enough along in system planning and implementation to assess the concomitant changes in health care, the risks or benefits. Incentives for participation have not been evaluated or addressed.

RECOMMENDATIONS:

- Plan as part of the system development the ability to track corresponding changes in healthcare, so that determinants of risk and or benefit can be discussed and evaluated. The State needs to be able to answer the question concerning what difference did the system make in the delivery of health services in Montana.
- To the extent necessary, the regions may want to monitor participant incentives to ensure appropriate resource utilization.

RATIONALE FOR RECOMMENDATIONS:

There are many factors driving trauma system development at the State, regional and local level. Most of these factors revolve around getting the right patient, to the right hospital, for the right definitive care. Other factors include changes in reimbursement available to practitioners and institutions providing care to trauma patients, volume of trauma patients needing care, and available resources to provide quality service. It is often said that improving the quality of care to trauma patients also improves care to other patients within the system. The increased training, heightened awareness of patient needs, improved intensive care services all serve to impact both trauma care and healthcare services in general. These potential changes in service configuration have impacts across the whole spectrum of healthcare. Knowing what these impacts are, and what incentives have been used to help develop the system, provide opportunities to review system effectiveness. The ability to track changes, both positive and negative, help to justify system enhancements, and identify areas of risk.

A. Administrative Components

2) System Development

8. Does the system have a plan to deal with patients of all ages?

Pediatrics and geriatrics are only dealt with in our Trauma Plan in the area of education of caregivers. A pediatric algorithm for inter-facility transport may have application in our system. There are no specific plans delineated for special age groups.

CURRENT STATUS:

The trauma system under development does not single out special populations. The State has identified in training programs special need requirements in treating the elderly or pediatric trauma patient population. There are no special pediatric centers in the State.

RECOMMENDATIONS:

- Consider the development of separate transfer protocols (scene and inter-facility) for the geriatric and pediatric populations

RATIONALE FOR RECOMMENDATIONS:

Developing treatment guidelines and transfer policies for populations at risk for "falling through the cracks" will heighten awareness among providers and promote rapid access to the appropriate care level.

A. Administrative Components

3) Legislation

1. Are there comprehensive trauma care legislation and regulations pertaining to the development of the trauma system?

There is comprehensive state trauma system legislation, which, as noted below, authorizes the department to adopt trauma system rules. While authorized, these rules have not yet been adopted. Draft rules have been developed with adoption tentatively scheduled for this summer or next fall.

Trauma Legislation: MCA 50-6-402. Department duties – rules

- (1) The department shall plan, coordinate, implement, and administer a statewide trauma care system that involves all health care facilities and emergency medical services within the state. The department shall also develop and adopt a statewide trauma care system plan and a state trauma register.
- (2) The department shall adopt rules to:

- (a) establish and coordinate the statewide trauma care system, including rules that establish:
 - (i) various levels of trauma facilities and the standards each facility is required to meet concerning personnel, equipment, resources, data collection, and organizational capabilities;
 - (ii) procedures for, standards for, and the duration of designation and revocation of designation of a trauma facility, including application procedures, site survey procedures, complaint investigation, and emergency suspension of designation;
 - (iii) operational procedures and criteria for the regional trauma advisory committees;
 - (iv) pre-hospital emergency medical services triage and treatment protocols for trauma patients;
 - (v) triage and treatment protocols for the transfer of injured persons between health care facilities;
 - (vi) requirements for collection and release of trauma register data;
 - (vii) quality improvement standards for emergency medical services and trauma care facilities; and
 - (viii) the duties, responsibilities, and functions of the emergency medical services advisory council created by 2-15-2215 , the trauma care committee created by 2-15-2216 , and the regional trauma care advisory committees created pursuant to 50-6-411 ;
 - (b) designate trauma regions throughout Montana, taking into consideration geographic distance from available trauma care, transportation modalities available, population location and density, health care facility resources, historical patterns of patient referral, and other considerations relevant to optimum provision of emergency medical care;
 - (c) establish the procedure to be followed by a health care facility to appeal to the department a decision by the department pursuant to 50-6-410 affecting the facility's designation as a trauma facility;
 - (d) specify the information that must be submitted to the department, including information from health care facilities, for statistical evaluation of the state and regional trauma care systems, planning prevention programs, assessing trauma-related educational priorities, and determining how trauma facilities and emergency medical services may comply with protocols and standards adopted by the department; and
 - (e) establish the electronic format and other standards that a health care facility trauma data system is required to meet in order to qualify as a hospital trauma register.
- (3) The department shall submit a report to each session of the legislature concerning the effectiveness of the trauma care system established under this part.
 - (4) This part does not restrict any other provisions of law allowing or requiring a health care facility or health care provider to provide health care services.

CURRENT STATUS:

Comprehensive Statutes are in place for the planning and development of a statewide trauma care system. Implementing Administrative Rules are still in the development phase.

RECOMMENDATIONS:

- **Continue consensus building for Administrative Rules and seek approval ASAP.**

RATIONALE FOR RECOMMENDATIONS:

Operational guidelines must be defined and adopted before implementation of system components can occur.

A. Administrative Components

3) Legislation

2. Does the legislation provide for secure funding of trauma system development and necessary financial support of trauma system components?

No. The initial trauma system legislation contained a dedicated funding source for the trauma system that was generated from an assessment on motor vehicle registration. However, the legislature removed this funding. There is significant opposition in the Montana legislature for the establishment of dedicated, earmarked funding sources. Absence of trauma system funding continues to be a huge obstacle to trauma system development.

CURRENT STATUS:

The legislation does not contain a funding mechanism nor provide for necessary financial support to develop and implement the trauma system currently in Statute. The draft trauma legislation contained a funding mechanism but it was cut in the final version of the chaptered Bill. As previously mentioned, the State has relied heavily on its ability to obtain Federal grants in the development of the trauma system. The State has not identified a steady source of reliable income to support the trauma system effort.

RECOMMENDATIONS:

- Obtain stable State and regional funding.
- Consider the use of Tobacco Prevention and Control funding to support trauma system development.
- Consider State General Fund or State Reserves to provide infrastructure support at the region and State level.

RATIONALE FOR RECOMMENDATIONS:

Obtaining secure, stable funding is the highest priority for further system implementation. There is a multitude of innovative strategies that States have used to fund the development of the trauma system. Some of these include the use of special user fees on vehicles or fines and forfeitures, high-risk activity user fees, allocations from the General Fund, hospital designation fees and partnering with corporate sponsors in public-private partnerships (insurance). Recently, Tobacco funding has been seen as a candidate for trauma system funding. Mississippi allocated a significant portion of the State's Tobacco settlement funds to the development of the trauma program.

It is recognized that "earmarked" funds are not received well by legislative bodies, preferring to allocate revenues based on legislative priorities. However, in order for the trauma system to become a reality, funding that can sustain the program over time must be obtained. If special fees are not an acceptable plan, then other stable revenue sources must be found. Grants should only be used for short-term efforts.

Priority for spending includes building infrastructure (State and regional), developing an integrated data collection (software and hardware) and evaluation system, completing a statewide communications plan and system, capital costs and uncompensated care. There is a link between Tobacco and EMS services in that many people accessing EMS do so because of smoking related diseases. Smoking is also a major cause of burn injuries. Given the needs of the system, it seems appropriate to identify some of those new dollars available from Tobacco settlement funds to offset the costs of further trauma system development and implementation.

A. Administrative Components

3) Legislation

- 3. Does the legislation include provisions for:**
- a. a trauma system plan
 - b. integration of trauma and EMS systems
 - c. prevention programs
 - d. establishment or adoption of standards of care

<ul style="list-style-type: none"> e. the designation of trauma centers f. organization of data collection and system evaluation g. confidentiality protection of data collection or quality improvement records/reports h. quality management and quality improvement programs i. anti-trust protection
<p>The Trauma Systems legislation provides for all areas a through h. An anti-trust protection provision was purposefully not included.</p>
<p><u>CURRENT STATUS:</u> All provisions are provided for in State legislation. It was unclear as to why anti-trust legislation was not included.</p> <p><u>RECOMMENDATIONS:</u></p> <ul style="list-style-type: none"> • The issue of anti-trust should be revisited. We recommend obtaining Attorney General opinion pertaining to anti-trust laws for trauma systems specifically related to the designation of facilities. <p><u>RATIONALE FOR RECOMMENDATIONS:</u> Addressing anti-trust issues at the out set of system development is desirable rather than waiting for a potentially huge problem to occur.</p>
<p>A. Administrative Components</p> <p>3) Legislation</p> <p>4. Does the legislation authorize dedicated and earmarked trauma funding? Are the funds placed in a special account rather than in the general fund revenue?</p>
<p>Although the original bill provided funding for the trauma system, the legislation was passed without a funding source. See question A.3.2 (Note: it would seem that this question could be integrated with A.3.2)</p>
<p><u>CURRENT STATUS:</u> Refer to A.3.2</p> <p><u>RECOMMENDATIONS:</u></p> <p><u>RATIONALE FOR RECOMMENDATIONS:</u></p>
<p>A. Administrative Components</p> <p>4) Finances</p> <p>1a. Are there two years of audited trauma system financial reports, as defined by generally accepted accounting principles?</p> <p>1b. Are costs reported in a standardized model accounting format?</p>
<p>Our only current funding source for trauma system development is a CDC Trauma Grant. Should there come a time when our program becomes funded, the State of Montana provides a standardized accounting format for those programs with earmarked or year-to-year funding. (Note: This question may not mean much for state-level systems)</p>
<p><u>CURRENT STATUS:</u> There is no stable funding at this point and thus is not applicable. The use of grant funds is audited through the granting agency.</p> <p><u>RECOMMENDATIONS:</u></p> <ul style="list-style-type: none"> • Once secure funding has been obtained, audits should be performed in accordance with general accounting standards. <p><u>RATIONALE FOR RECOMMENDATIONS:</u></p>
<p>A. Administrative Components</p> <p>4) Finances</p> <p>2. Does the lead agency report its finances by component, in</p>

summary, or both? How are the finances documented for review? Give an example.	
The State of Montana provides a standardized accounting system for all state agencies. Reports are not made by trauma system component. Any breakout would have to be a manual breakout and would be quite difficult. (Note: this will be a difficult question for most state agencies)	
<u>CURRENT STATUS:</u> Refer to A.4.1	
<u>RECOMMENDATIONS:</u>	
<u>RATIONALE FOR RECOMMENDATIONS:</u>	
A. Administrative Components 4) Finances 3. What are the sources and terms of external funding (for example, grants, state/local taxes)? If a funding source is tied to a specific program (for example, drunken driving, registration tax), provide past history and future projections.	
<p>The trauma system receives funding from the following grant programs:</p> <ul style="list-style-type: none"> • CDC State Injury Intervention and Surveillance Program – Trauma Care System – currently in the 2nd year of 3-year grant (Trauma System Development) • EMS-C Targeted Issues Grant – currently in 2nd grant year (Continuum of Excellence – QI Grant) • EMS-C Continuation Grant (3rd year) and EMS-C Partnership Grant (Injury Prevention Program) • Montana Highway Traffic and Safety has supported the development of the trauma system since 1989, purchased the Trauma Registry for all facilities in 1990, and continue to fund ½ salary of the Trauma Registry database technician. <p>In addition, the state General Fund supports some of the EMS and Injury Prevention Section staff who, in turn, provides assistance in state trauma system development.</p>	
<u>CURRENT STATUS:</u> The State has been remarkably successful in obtaining Federal grants.	
<u>RECOMMENDATIONS:</u> • Continue to pursue obtaining grant funding.	
<u>RATIONALE FOR RECOMMENDATIONS:</u> The disadvantage of this approach is that this relieves the State of its responsibility to provide a secure source of funding. Grant funding should not be used to supplement General Fund obligations.	
A. Administrative Components 4) Finances 4. Does the budget coordinate with the goals and objectives of the trauma plan?	
The goals and objectives of the trauma plan and trauma system development have driven the goals, objectives and budget of each grant. This is not specifically linked to the trauma plan itself.	
<u>CURRENT STATUS:</u> The trauma plan is governed by the acquisition of grants rather than any long-term strategic plan.	
<u>RECOMMENDATIONS:</u> • The trauma plan must be updated and a timeline created for assignment of budget priorities.	

RATIONALE FOR RECOMMENDATIONS:

Refer to A.2.3.

A. Administrative Components

4) Finances

- 5. Does the trauma center track and measure trauma costs by patient, diagnosis, length of stay (ICU), facility, department, physician, and payor?
If yes, how is this information used (for example, feedback to physicians)?
Is this information forwarded to the lead agency?**

Although the Hospital Trauma Register provides the means of measuring each of the data points listed above, the State Trauma Register tracks a subset of these data points, and does not currently download financial information or payor source information from facilities. The State data set is focused toward system or regional QI rather than individual facility data. The financial component of the trauma register is not well developed nor well utilized.

Each of the trauma coordinators and trauma registrars receive training in elementary data retrieval and data presentation. Additionally, each trauma registrar is able to print pre-defined reports that will summarize their trauma registry patients. Many of the larger facilities have supplied additional personnel and resources to optimize data retrieval and presentation. The majority of the Area Trauma Facilities (Level 3) and Regional Trauma Centers (Level 2) provide data summary reports to Multidisciplinary Trauma Committees within their facilities. Additionally, the State Trauma Systems Coordinator provides system data information at the RTAC and STCC meetings.

CURRENT STATUS:

This is sporadic and institution specific. There is no standardized process or requirement for the collection of cost data.

RECOMMENDATIONS:

- **Begin to use the current registry system for understanding system operations and quality improvement opportunities.**
- **Translate registry data, including cost data, into useful information about system operations, resource utilization, overall cost effectiveness, and timeliness of care.**

RATIONALE FOR RECOMMENDATIONS:

This information is incorporated into the registry and is not yet being obtained. This is short sighted as this may mitigate the use of funds, if these funds should become available, for uncompensated care. The institutions should also collect these data for cost-effective analysis. The RTAC should use these data for allocation of resources and financial needs. The State needs these data to determine the overall financial burden of injury. Finally, if there is evidence for measuring data and reducing variation and limiting costs, there is further incentive for payors to become involved in the trauma system.

A. Administrative Components

4) Finances

- 6. Does the trauma system equate costs to relative value gained (cost of utilizing resources)?**

We do not have the information necessary to compute these costs. (Note: this question is a bit difficult to understand. An example would be helpful)

CURRENT STATUS:

There is no mandate requiring system participants to report cost data.

RECOMMENDATIONS:

- **None**

RATIONALE FOR RECOMMENDATIONS:

Understanding the cost of the system is essential to improve and enhance the system.

The State will need to determine what value did the citizens of Montana receive by implementing the trauma system? Did the cost of providing the system achieve the goal of reduction in morbidity and mortality from trauma? What were the expected outcomes and were they achieved and at what price? These are some of the questions that the system will want to answer as it matures and becomes fully operational. Health care dollars are very valuable, and the State will want to ensure that in setting up the trauma system it gets the best service for the most reasonable price.

A. Administrative Components

4) Finances

7. Does the trauma system or center track payor mix utilization? If yes, what are the current payor mix, relative collection ratios, and defined trends?

In our inclusive system, the decision to use the Trauma Register (provided free of charge to any facility in our state) is up to the facility. Although financial information would be available to us if each facility utilized the financial portion of the Trauma Register, there is only one facility collecting financial data to any extent at this time. A separate program must be written (at an additional cost) to allow the automatic transfer of financial data from the facility accounting database to the Trauma Register. Funding for this additional program has not been secured, and many facilities are unwilling to dedicate resources to collect this information by hand.

CURRENT STATUS:

Some isolated hospitals collect payor mix information.

RECOMMENDATIONS:

- Data regarding payor mix should be collected at every level within the system to provide for analysis of cost effectiveness, years of potential life lost, and provide a means from which to obtain additional funding as necessary to support the system.

RATIONALE FOR RECOMMENDATIONS:

B) Operational and Clinical Components

1) Injury Prevention and Control

1. Does your system have a system wide injury coalition? If yes, what are the member organizations?

Under the auspices of emergency medical services for children grant, a statewide injury prevention program was initiated. To assure integration with the state trauma care system, the injury prevention oversight committee for the EMSC project was disbanded and will be "rolled" into the trauma system infrastructure. At their last meeting the STCC approved the establishment of an STCC Injury Prevention subcommittee and an overall injury prevention infrastructure which is will coordinated with the state trauma care system.

Members of this subcommittee will be selected and will meet this spring. This subcommittee will utilize the three RTAC Injury Prevention subcommittees and will coordinate the multiple injury prevention activities in our vast state.

CURRENT STATUS:

The State is to be commended for the use of private grants to implement prevention programs. Additionally, the Critical Illness Trauma Foundation, a quasi-private organization has done a remarkable job in identifying areas to focus prevention efforts and in implementing prevention programs. There is establishment of a prevention subcommittee at the State level and there are plans to integrate with the trauma system. Preliminary efforts are exemplary.

RECOMMENDATIONS:

- Formalize integration with the STCC and each RTAC. Include appropriate broad-based membership from consumers, highway safety organizations and other interested constituents. Future coordination of multiple ongoing activities throughout the State

should be done through the subcommittees.

RATIONALE FOR RECOMMENDATIONS:

Input from consumer groups and highway safety organizations may provide the State with additional data to help focus injury prevention efforts, and in some cases, the funds to carry through with prevention programs. Most important is to develop a "grassroots" network of interested and involved individuals and groups necessary to carry prevention activities forward. To prevent duplication of efforts and unnecessary expense, it is prudent to ensure that injury prevention is coordinated through the STCC and RTAC so those lessons learned can be applied successfully throughout the State.

B. Operational and Clinical Components

1) Injury Prevention and Control

2. What plans have the coalition developed?

Although the new Injury Prevention subcommittee has not been formalized, the EMS and Injury Prevention Section developed and distributed a State Injury Prevention and Control Plan in 1998. Efforts of the subcommittee will be directed toward meeting the objectives of the plan.

CURRENT STATUS:

The preliminary injury prevention program is thoughtful and has many worthwhile components to pursue. This initial program effort is an excellent background upon which to develop a mature, robust statewide program.

RECOMMENDATIONS:

- The Committee would be wise to carefully select a limited number of projects that are manageable, capable of developing the necessary grassroots support, and feasible to track and document an improvement in outcome.

RATIONALE FOR RECOMMENDATIONS:

While containing many excellent features, the current proposal is extremely ambitious and encompasses a large number of issues.

B. Operational and Clinical Components

1) Injury Prevention and Control

3: What elected officials have been educated about injury and injury control?

We have not undertaken the development of a formal education process for elected officials.

CURRENT STATUS:

To date no education of elected officials has been undertaken.

RECOMMENDATIONS:

- The education of Legislators regarding the importance of injury prevention should be a priority.
- Through the process of injury surveillance, specific areas in which to focus prevention efforts should be identified and passed on in the form of reports to Legislators.
- Grassroots efforts should be consolidated to build up a constituency to marshal the Legislators.
- The empowerment of pre-hospital providers to educate the public and Legislators is a potential strong constituency that understands injury causes and the need for prevention. The hospitals and medical associations can act as facilitators in this regard.
- The STCC and RTAC should form subcommittees to educate the Legislators and develop an agenda for education.
- A community advisory board should be considered to focus injury efforts based on

community needs and concerns. Ensure that influential persons in the community are involved in the community advisory boards and subcommittees.

- To further educate Legislators, it may be appropriate to invite one or more interested members to sit on either community advisory boards or prevention subcommittees. Additionally, physicians can invite Legislators into the hospital setting to spend time with the physician and/or pre-hospital providers so that the burden of injury may be better appreciated.

RATIONALE FOR RECOMMENDATIONS:

Typically, the burden of injury is under appreciated both at the community and the executive level. Furnishing influential persons within the community with data and first-hand experience of the nature of injury and its consequences may have remarkable effects for the initiation and development of prevention programs. Legislators must have valid data and a clear understanding of the issues to wisely invest the limited resources under their control.

B. Operational and Clinical Components

1) Injury Prevention and Control

4. How are you involved with public/voluntary organizations to aid system financing?

We have not pursued the option of public or voluntary funding of our system. In a state-operated system, it is difficult to procure private funding sources. However, we have established an excellent collaborative relationship with the Critical Illness and Trauma Foundation to mutually support injury prevention activities.

CURRENT STATUS:

The State is to be commended on its collaborative involvement with CIT and the use of grants to initiate prevention activities.

RECOMMENDATIONS:

- See B.1.1

RATIONALE FOR RECOMMENDATIONS:

B. Operational and Clinical Components

1) Injury Prevention and Control

5. What local injury surveillance data has the coalition reviewed (mortality data from vital records, police traffic crash data, EMS-run data, E-coded hospital discharge data)? What injury problems and high-risk groups and environments were identified?

The TENkids Injury Prevention Committee reviewed traffic, open water drowning, falls, intentional injury and firearms data during their initial meetings. These data sources (as well as other sources) will be presented to the STCC Injury Prevention Subcommittee during their formative meetings. Data sources included state vital statistics records, trauma register records, and Fish, Wildlife and Park records (regarding drowning). Montana does not have an easily accessible hospital discharge data set. While we are establishing a pre-hospital data collection system through a statewide computer network, this system is not yet providing data.

CURRENT STATUS:

The prevention efforts to this point are commendable. However, the unavailability of pre-hospital and hospital discharge data has significantly compromised injury surveillance and any ability to analyze outcomes, and to measure outcome improvements in the future.

RECOMMENDATIONS:

- The importance and the utility of a variety of different data sources for injury surveillance is emphasized under "Information Systems."
- A hospital discharge data set along with data on ER visits and pre-hospital care are a critical necessity for an accurate assessment of the burden of injury.

- Access to, and linkage of crash data, pre-hospital care and hospital discharge data should be a priority with a view to its completion prior to cessation of CDC funding.

RATIONALE FOR RECOMMENDATIONS:

Limiting injury surveillance to trauma registry and vital statistics records dramatically underestimates the burden of injury as most patients are not admitted to a trauma center nor killed as a result of their injury. For these reasons, it is critical to obtain data from other sources to estimate the impact of injury on the population. Access to hospital discharge and EMS data are a critical component of trauma prevention activities.

- 6. Operational and Clinical Components**
6. Injury Prevention and Control
6. Have open community forums been held to identify injury control issues of concern to the community? What key problems were identified?

Although the Injury Prevention Coordinator has solicited feedback from members of the TENKids Injury Prevention Committee, professional organizations, and committees with injury prevention as a focus, there has been little effort to identify issues of concern to the community. There is a concerted effort to coordinate injury prevention activities with the efforts of healthy communities and the Community Incentive Program...thus attempting to solicit broader community assessment and involvement. Improved collaboration between the RTAC injury prevention efforts and ongoing community coalitions is planned.

CURRENT STATUS:

Efforts have been limited in this regard. See recommendations above regarding community input.

RECOMMENDATIONS:

- N/A

RATIONALE FOR RECOMMENDATIONS:

- B. Operational and Clinical Components**
1) Injury Prevention and Control
7. What priority injury problems have the coalition identified?

The TENKids Injury Prevention Committee approved the following problems areas during the development of the Injury Prevention Plan:

- Traffic
- Intentional Injury with emphasis on suicide and domestic violence
- Falls
- Water safety

CURRENT STATUS:

The proposed injury prevention plan is well considered and the injury problems identified have been appropriately assessed.

RECOMMENDATIONS:

- We suggest that the injury prevention plan be implemented expeditiously.
- Continue to prioritize efforts depending on injury surveillance data.
- The breadth of activities proposed is ambitious and a staged implementation based on priority and likelihood of success, including community support, should be carefully considered.

RATIONALE FOR RECOMMENDATIONS:

- B. Operational and Clinical Components**
1) Injury Prevention and Control

8. What intervention plan has been developed to address the priority injury control issues?
Injury Prevention and Control Plan: see Appendix C
<p>CURRENT STATUS: See B.1.7. and previous comments.</p> <p>RECOMMENDATIONS:</p> <p>RATIONALE FOR RECOMMENDATIONS:</p>
<p>B. Operational and Clinical Components</p> <p>1) Injury Prevention and Control</p> <p>9. How will you evaluate the effectiveness of the priority injury control initiatives? What are the results of any completed evaluations?</p>
<p>The goal of the Injury Prevention and Control program is the reduction of unintentional injury by 5% by 2001</p> <p>Evaluation:</p> <ul style="list-style-type: none"> • Track rates of injury death and frequency • Track rates of preventative behaviors (seatbelt use, child safety seat use) • Track rates of enforcement (seatbelt and DUI ticketing) • Track pediatric bicycle helmet use rates • use observational data (Highway Traffic and Safety; Fish, Wildlife and Parks) survey data • Benchmark against national rates and past Montana rates <p>Statistical analysis of data</p> <p>Results to date: Water Safety: Deaths in early 1990's were 14-17 per year Program kickoff in 1997: 12 deaths 1998: 7 deaths – no children</p> <p>However, with a small sample, it is, of course, impossible to attribute this reduction directly to our water safety efforts.</p>
<p>CURRENT STATUS: There appears to be an initial developed model for evaluation and assessment of prevention initiatives.</p> <p>RECOMMENDATIONS:</p> <ul style="list-style-type: none"> • Continue with the current model. • Keep injury initiatives well focused with tightly defined goals, as these have the highest likelihood of success. • Continue to track outcomes to ensure improvement with commitment of resources and implementation of programs. <p>RATIONALE FOR RECOMMENDATIONS: Many presumed excellent prevention efforts have been demonstrated to be non-productive when outcomes are assessed. Outcome data to support ongoing commitment is crucial.</p>
<p>B. Operational and Clinical Components</p> <p>1. Human Resources</p> <p>1. Workforce Resources</p> <p>1. Describe your system for evaluating and assessing the adequacy of the work force resources available within and</p>

outside of the hospital. Describe the current strengths and weaknesses of your system of evaluating the level and adequacy of human resources for the entire trauma care delivery system.

(Note: this is a difficult question for a state level trauma system. It is essentially impossible to assess the adequacy of all workforce resources inside and out of the hospital. This seems more oriented to a local trauma system.) We have no current plans to assess these resources. However, we do make an effort to assess the training and education needs of the existing workforce personnel.

CURRENT STATUS:

A system-wide assessment of workforce resources has not been carried out.

RECOMMENDATIONS:

- **A system-wide inventory of workforce resources, including medical, nursing, and pre-hospital care, should be conducted and mapped out by location using a geographic information system.**
- **Information to ascertain existing pre-hospital, medical, and nursing resources should be obtained from the State EMS Bureau, Board of Medical Examiners, State Board of Nursing, Montana Medical Association, Hospital Association, hospitals, Office of Rural Health, and other professional organizations or associations.**

RATIONALE FOR RECOMMENDATIONS:

Information regarding workforce resources is essential to plan, develop, and implement a statewide trauma care system. The State, regional, and local entities responsible for trauma system planning must have a full knowledge of what the existing resources are in order to determine where the gaps in the system are. Mapping this information out by county and region (and possibly congressional district) will provide an excellent statewide perspective of human resources availability. The map will serve as a useful tool for targeting education, recruitment, and constituents (congressional, influential people, etc.), and will provide valuable information for system policy development.

B. Operational and Clinical Components

2) Human Resources

a) Workforce Resources

- 2. Describe how you have standardized the number and type of human resources to be available for the pre-hospital management of EMS patients, including the trauma patient.**

We have not standardized these numbers. It simply does not seem reasonable nor productive in a statewide inclusive trauma care system.

CURRENT STATUS:

The data available have not been applied to establish standards for pre-hospital care resources.

RECOMMENDATIONS:

- **Because it is essential to establish standards and expectations for human resource allocation (regardless of whether an inclusive or exclusive system is being developed), existing human resource data should be analyzed to identify needs and target goals for allocation, education, and recruitment.**

RATIONALE FOR RECOMMENDATIONS:

Refer to comment noted under B. 2) a.1.

B. Operational and Clinical Components

2. Human Resources

a) Workforce Resources

- 3. Do you have a quality management plan for monitoring availability of pre-hospital and hospital trauma care resources?**

Both the Medic! (pre-hospital database distributed to each ambulance company) and

Trauma! (hospital trauma register) monitor select data points that reflect the availability of pre-hospital and hospital resources. These data points will be utilized in our trauma system quality improvement program (see draft Quality Improvement Plan, Appendix D). We are initiating a statewide quality improvement program through an EMSC Targeted Issues Grant.

CURRENT STATUS:

Although the Medic! Data collection system has been distributed to pre-hospital care agencies throughout Montana, data is not uniformly or consistently submitted. Pre-hospital data collected thus far have not been used to assess resource availability.

The Cales data system has been installed in hospital facilities throughout the State. Data reporting, however, has not been consistent. As a result, data has only been partially available for quality improvement purposes. At this point, the State has not implemented a quality improvement program for system monitoring.

RECOMMENDATIONS:

- A data linkage process needs to be created to link data that are presently available from other sources or formats. At a minimum, data from the Medic! database and the Montana Trauma Registry should be linked.

RATIONALE FOR RECOMMENDATIONS:

Monitoring system resources can not be accomplished without data.

B. Operational and Clinical Components

2. Human Resources

a) Workforce Resources

4. Have you developed a process for evaluating resource usage and matching resource response relative to levels of activity and level of patient care needs and system response? Discuss the sources of information and data for monitoring the system.

a. Have you identified the need for an increased or decreased number of personnel in the pre-hospital arena? Discuss strategies for securing needed personnel.

b. Have you identified the need for an increased or decreased number of personnel in the systems administration or hospital arena? Discuss strategies for securing needed personnel.

"No" is the answer to each of these questions. In a statewide, inclusive trauma care system, this assessment would be very difficult and would be of limited value. Assessing the need for state-level administrative personnel would be more appropriate. This has been done in the state trauma system plan.

CURRENT STATUS:

The unavailability of data has hampered the assessment of resources.

RECOMMENDATIONS:

- Data must be collected at the local level and integrated at the regional and State levels. After a process has been established for ongoing data collection, the monitoring of resources relative to activity can be accomplished.

RATIONALE FOR RECOMMENDATIONS:

Refer to comment noted under B.2) a.1.

Data will enable the regions and State to determine whether the resources available are adequate given the level and acuity of patient activity. For example, if in one county there are no pre-hospital resources above the EMT-B level, and only one Level IV facility with family practitioner resources, the State and/or region can use data to evaluate patient volume and acuity and determine if the resources available are adequate. If in this county,

it is found that a considerable amount of major trauma occurs, strategies can then be developed to increase patient access to higher resource levels (i.e. through increasing EMT levels, initiating early air transport/transfer, on-line telemedicine, surgeon support, etc.).

B. Operational and Clinical Components

2. Human Resources

a) Workforce Resources

- 5. Outline your plan for flexible response to manage all patients during peak periods of activity that might stress the system. What is your protocol for trauma center divert and pre-hospital transport responses? How do you evaluate its effectiveness, and what are your options for creating a change?**

We do not have this plan developed. However, in the planning stages is a system where each RTAC will develop a regional plan, which will address and integrate pre-hospital transport resources, facility resources and other resources. This will likely include the issues identified in this question. Issues pertaining to trauma center diversion and pre-hospital transport responses will likely await the trauma facility designation process.

CURRENT STATUS:

Although there is an ad hoc system in place to divert patients from centers that have overwhelmed their resources, a formal plan has yet to be developed.

RECOMMENDATIONS:

- **Carry out steps in previous questions to formalize a divert plan at both the regional and local levels to monitor patient activity.**

RATIONALE FOR RECOMMENDATIONS:

Regional and local divert policies, based on State guidelines, are necessary to assure that seriously injured patients are able to access timely trauma care. It is important to monitor patient activity relative to resources so that a back-up plan for both pre-hospital and hospital trauma services can be established. For example, if a hospital is frequently on divert for lack of anesthesia resources, a plan can be developed to increase anesthesia coverage during periods of peak volume. Divert plans should be in place at every hospital and should address who is responsible for placing the facility on divert, where patients will be diverted, and how hospital to hospital and pre-hospital to hospital communication will occur. In areas where there are long distances between facilities, it will be important for hospitals to consider how they might provide initial ATLS stabilization, even if definitive care services are not available.

B. Operational and Clinical Components

2. Human Resources

b) Education

- 1. Have you developed educational standards for all trauma caregiver personnel?**

There are suggested standards for nurses who provide in-hospital trauma care. There are educational standards for physicians providing in-hospital trauma care. These are currently in the state trauma system plan and will likely be included in the state administrative rules.

CURRENT STATUS:

Educational standards are presently only suggested and are not required.

RECOMMENDATIONS:

- **The State should establish educational requirements for all physicians and nurses involved in the initial resuscitation and management of seriously injured patients, including emergency medicine physicians, family practitioners, surgeons, anesthesia (MD and CRNA), mid-level practitioners, and emergency and critical care nurses.**
- **National guidelines and ACS standards should be considered when developing standards for trauma education. At a minimum, ATLS should be required for**

physicians, and TNCC, CATN, or a comparable course should be required for nurses. Annual continuing trauma education requirements should also be established. These requirements should be codified in Administrative Rule.

RATIONALE FOR RECOMMENDATIONS:

Education is essential, particularly in a rural state where trauma care providers practicing in remote locations have limited resources, varying expertise, and infrequent exposure to severely injured patients.

B. Operational and Clinical Components

2) Human Resources

b) Education

- 2. Have you done a trauma system educational needs assessment and identified educational levels of all pre-hospital providers, as well as the need for additional programs/certifications? Have you assessed all currently available educational programs prior to instituting new programs?**

Pre-hospital:

There has not been a specific assessment of pre-hospital educational needs. Emphasis has been placed on providing the Montana-developed Critical Trauma Care Course to pre-hospital care providers. However, this has not been promoted aggressively during the past few years.

Nursing:

During the past 5 years, Trauma Coordinators in the Regional Trauma Centers have continually assessed the educational needs of nurses and ancillary personnel in their own facilities and in facilities in their referral area. The majority of the trauma nurse training in the "frontier" areas of Montana have been provided by the Regional Trauma Centers, often at minimal or no cost. There are very few programs available to these very rural areas, and staffing issues often prevent more than one nurse attending educational offerings away from the facility.

We often incorporate the educational needs for the caregivers when we determine the objectives for grant applications. We assess educational programs for cost and practicality. We have developed less expensive options to the usual trauma training, and have developed alternatives to classroom training including CD-ROM training and video training. In 1995, the Montana Trauma Coordinators edited a Trauma Education for Rural Nurses text, instructor manual and student guide that is currently being revised. This text offers a low-cost option for trauma training.

Physicians: There has been no specific assessment of the educational needs of physicians. The EMS and Injury Prevention Section, in collaboration with ACS-COT, the Montana Medical Association and Montana State University regularly offers ATLS training.

CURRENT STATUS:

The State and regions should be applauded for creating excellent alternatives to education through video and CD-ROM courses, mobile training units, and the Trauma Education for Rural Nurses course, and the Critical Trauma Care course for pre-hospital providers.

RECOMMENDATIONS:

- Exchange programs between small remote facilities and larger hospitals with reciprocal agreements should be implemented at all levels of care, including pre-hospital providers, nurses, and physicians. Mid-level practitioners at a minimum, and nurses practicing in remote areas who often are the most advanced caregivers available until the arrival of a family practice physician called in from home, should at least audit an ATLS course.
- The feasibility of telemedicine conferences for all provider levels should be evaluated.

RATIONALE FOR RECOMMENDATIONS:

Refer to comment noted under B.2) b.1.

B. Operational and Clinical Components

2) Human Resources

b) Education

3. Does your trauma plan include central or state certification/recertification/decertification for pre-hospital providers?

If no, what is your plan for certification/recertification/decertification of pre-hospital care providers as they relate to the trauma care system?

(Note: This question is difficult to answer. It is unclear whether we are discussing the overall pre-hospital certification program (which we have) or specific certification in trauma management (which we do not have))

There is no specific state certification for trauma management for pre-hospital care providers. However, there is a statewide system of pre-hospital licensure including licensure of EMTs (basic through paramedic) by the Montana Board of Medical Examiners using the National Registry of Emergency Medical Technicians. The EMS and Injury Prevention section is responsible for the certification of First Responders and First Responder – Ambulance personnel. There are neither specific initial, nor recertification requirements for EMTs or First Responders in the area of trauma management.

CURRENT STATUS:

The Montana Board of Medical Examiners has statutory authority for licensure of EMTs, basic through paramedic. Certification is based on the National Registry of Emergency Medical Technicians. A professional standards program that addresses disciplinary action, including de-certification, is in place. The EMS and Injury Prevention Section is responsible for certification of First Responder personnel.

RECOMMENDATIONS:

- No recommendation.

RATIONALE FOR RECOMMENDATIONS:

Existing system meets the standard.

B. Operational and Clinical Components

2) Human Resources

b) Education

4. Describe the quality monitoring activity for review of educational requirements for trauma care personnel.

Patient outcomes will be monitored utilizing Trauma Registry data at the RTAC and STCC levels for variance. Educational programs will reflect educational needs identified through patient case review and data trending.

CURRENT STATUS:

The plan to monitor educational requirements for trauma care providers is appropriate, although not yet feasible. The present system lacks the infrastructure, process, and data necessary to perform this task.

RECOMMENDATIONS:

- A trauma quality assessment program should be adopted and implemented as soon as possible. The necessary infrastructure (quality improvement committees) at the local, regional, and State levels needs to be established to perform quality improvement activities, including multidisciplinary review and data analysis.
- Monitor educational requirements as part of the State's trauma hospital designation process. For example, if registry data or medical records review reveal a trend in splenectomy among hemodynamically stable pediatric patients with splenic injury, education in spleen salvage methods might be indicated.

RATIONALE FOR RECOMMENDATIONS:

The goal of a trauma care system is to reduce injury related death and disability through injury prevention, education, and performance improvement. Continuous performance monitoring using a valid and objective process will identify opportunities to improve care and target injury prevention and education programs.

B. Operational and Clinical Components

3) Pre-hospital Care

a) Emergency Medical Services Management Agency

1. Is there an EMS agency that has the authority to regulate pre-hospital care?

The EMS and Injury Prevention Section of the Department of Public Health and Human Services has broad licensing and regulatory authority for ambulance services, air ambulance services and non-transporting units. The Board of Medical Examiners has the authority for the licensing of individual EMTs. There is a cooperative arrangement between the Board of Medical Examiners and EMS/Injury Prevention Section (defined by administrative rule) whereby the Section does the day-to-day administration of the EMT licensure program. The Board of Medical Examiners investigates complaints regarding an individual EMT's patient care in collaboration with the Section. The EMS and Injury Prevention Section manages complaints regarding licensed emergency medical services.

CURRENT STATUS:

The EMS and Injury Prevention Section of the Montana Department of Public Health and Human Services has statutory authority to regulate care.

RECOMMENDATIONS:

- A strong leader for the recently vacated EMS Director should be recruited as soon as possible.

RATIONALE FOR RECOMMENDATIONS:

Drew Dawson was the Emergency Medical Services and Injury Prevention Section's Director until he was promoted to Health Systems Bureau Director this year. Under Mr. Dawson's leadership many of the initiatives for the trauma system in Montana were developed. Although the search for a new Director is underway, the vacuum in leadership may become problematic. Finding the right person for this important leadership position will be pivotal in the future development of the State trauma system.

B. Operational and Clinical Components

3) Pre-hospital Care

a) Emergency Medical Services Management Agency

2) Administration

- Is the management agency's medical director familiar with, experienced in, and currently involved in pre-hospital care?**
- Are the medical director's qualifications commensurate with his/her scope of responsibility in the EMS system?**
- Is there a quality improvement educational program, and are monitoring functions performed by the medical director or designee?**
- Is there support staff, including a system administrator familiar with and experienced in pre-hospital management?**

The state EMS and Injury Prevention Section does not have a medical director. A medical direction subcommittee of the state EMS Advisory Council provides medical direction. Ultimate authority for EMTs rests with the Board of Medical Examiners. Advanced level emergency medical services are required to have a medical director; however, there are not specific training requirements for the medical director.

CURRENT STATUS:

There is no State EMS and Injury Prevention Section Medical Director.

RECOMMENDATIONS:

- If stable funding is obtained, efforts should be made to fund an EMS Medical Director position.
- The State Trauma Care Committee and EMS Advisory Council should be key players in the recruitment of this position.

RATIONALE FOR RECOMMENDATIONS:

A Medical Director position would benefit the system in that it would provide the consistent medical oversight and direction necessary for ongoing system development and maintenance. Once stable funding is secured, this position should be funded, at least on a part time basis. Creative alternatives to funding this position should be explored, including possibilities with the Critical Illness and Trauma Foundation.

B. Operational and Clinical Components

3) Pre-hospital Care

a) Emergency Medical Services Management Agency

3) Education

- a. Has the pre-hospital care management agency integrated care of the trauma patient into the pre-hospital training program?
- b. Has the pre-hospital care management agency developed ongoing trauma education programs?

Montana uses the EMS national standard curricula for the education of its pre-hospital care providers and the National Registry of EMTs continuing education requirements. There are not specific requirements for assuring integration of the pre-hospital training with the needs identified by the trauma system. However, the Critical Trauma Care for EMTs course was developed in Montana to teach pre-hospital care providers to recognize the major trauma patient and to provide specific interventions. Other trauma management training programs are offered, but not in a systematized method.

CURRENT STATUS:

No pre-hospital education specific to the needs of the Montana Trauma System has been required. There has been the development of a "Critical Trauma Care for EMTs" course.

RECOMMENDATIONS:

- Pre-hospital education specific to the trauma patient should be encouraged and coordinated through the RTAC.

RATIONALE FOR RECOMMENDATIONS:

As the trauma system matures with development of triage and transport protocols, pre-hospital provider trauma education will become increasingly important.

B. Operational and Clinical Components

3) Pre-hospital Care

a) Emergency Medical Services Management Agency

4) Criteria

- a. Are there protocols for triage, patient delivery decisions, treatment, and inter-hospital transfer?
- b. Have you implemented ongoing quality improvement of triage/treatment/inter-hospital transfer criteria?
- c. Have policies, procedures, and/or regulations regarding on-line and off-line medical direction been implemented within the system?
- d. Are standards from the Commission of Accreditation of Ambulance Services and the Commission on Accreditation of Air Medical Services integrated into patient delivery decisions, treatment, and transfer protocols?

There are statewide pre-hospital treatment protocols adopted by the Board of Medical

Examiners. These do not currently reflect triage, patient delivery, and inter-hospital decisions coordinated with the trauma care system. These protocols will be revised to coincide with the trauma care system following the formal facility designation process. Trauma treatment is reflected in the statewide protocols.

We are implementing a statewide quality improvement system (Continuum of excellence), but this does not currently reflect trauma triage and inter-facility transport).

There are state administrative rules regarding medical direction (on-line and off-line) for services above the EMT-Basic level, but these requirements are not specific to trauma.

We do have requirements for on-line medical control, but this is not specific to the trauma patient. CAAS and CAAMS standards are not integrated into state requirements.

CURRENT STATUS:

Protocols for triage, patient delivery decisions, treatment, and inter-hospital transfer have not been implemented. There are Administrative Rules for on/off line medical direction above the EMT basic level. Standards from the Commission of Accreditation of Ambulance Services and the Commission of Air Medical Services are not currently integrated into patient delivery decisions, treatment, and transfer protocols.

RECOMMENDATIONS:

- **The major trauma patient should be identified by the first health care provider on the scene and the system should be activated based on this determination.**
- **There is a role for a Central Communications Center within each region.**
- **Overriding principles for triage, patient delivery, decisions, treatment, and inter-hospital transfer should be developed by the STCC.**
- **A quality improvement plan should be implemented concurrently with these protocols.**
- **On-line medical direction, where possible, should be implemented for long transports at all levels of care, including EMT basic level.**
- **At a minimum, standards from the Commission on Accreditation of Ambulance Services and the Commission on Accreditation of Air Medical Services should be reviewed and considered as benchmarks by the STCC.**

RATIONALE FOR RECOMMENDATIONS:

The major trauma patient should be identified by the first health care provider on the scene who should be enabled to activate the entire trauma system's response. Triage refers to activation of the trauma system response to ensure that the patient gets to the highest level facility appropriate for the care required at the earliest possible time. In Montana, the major trauma patient may be extremely far away from definitive care. This necessitates utilizing multiple health care providers, modes of transportation, and health care facilities for a single trauma patient. Because there are multiple "dots" that need to be connected to assure the most rapid delivery of the patient to the highest level facility appropriate for care, there is a role for a Central Communications Center within each region. The State Trauma Care Committee should develop overriding principles for triage, patient delivery, decisions, treatment, and inter-hospital transfer, and the operational details should be sorted out at the regional and local levels. It will be important to incorporate out-of-area responses (Wyoming and Canada).

Triage criteria will most probably require refinement within months of their implementation. Therefore, a quality improvement plan should be initiated concurrently with implementation of these protocols.

On-line medical direction should be implemented for long transports at all levels of care, including EMT basic level since transport distances can be excessive in Montana.

At a minimum, standards from the Commission on Accreditation of Ambulance Services and the Commission on Accreditation of Air Medical Services should be reviewed by the STCC as it develops principles for patient delivery decisions, treatment, and transfer protocols.

B. Operational and Clinical Components
3) Pre-hospital Care
a) Emergency Medical Services Management Agency
5. Is there a standardized clinical examination for certification and decertification to provide patient care?

(Note: it is unknown what is meant by a "standardized clinical examination"). There is a standard statewide practical examination for the licensure of all pre-hospital EMS providers. However, this is not required for decertification nor is it required for recertification.

CURRENT STATUS:
This question will be dropped from this and future trauma systems consultations.

RECOMMENDATIONS:
 • N/A

RATIONALE FOR RECOMMENDATIONS:

B. Operational and Clinical Components
3) Pre-hospital Care
a) Emergency Medical Services Management Agency
6. Is there a systemwide quality improvement program in place?

Under the auspices of and EMSC targeted issues grant, we are currently developing a statewide EMS quality improvement system. Some of the initial training has been conducted, but the system is not yet fully developed.

CURRENT STATUS:
The system-wide quality improvement program is under development.

RECOMMENDATIONS:
 • This should be completed as soon as possible, and careful attention should be paid to quality improvement loop closure.

RATIONALE FOR RECOMMENDATIONS:
Quality improvement is a fundamental tool for system improvement.

B. Operational and Clinical Components
3) Pre-hospital Care
b) Ambulance and Non-transporting Medical Unit Guidelines
1. Are there systemwide guidelines delineating how the type of transportation for the trauma patient is matched to the system's topography and demography, including distance?

No.

CURRENT STATUS:
No guidelines exist delineating the type of transportation for the trauma patient.

RECOMMENDATIONS:

- Guidelines should be developed by the STCC.
- As noted above, identification of the major trauma patient and activation of the trauma system should begin with the first healthcare provider caring for the patient.
- The concept of a regional Central Medical Dispatch center should be carefully considered for implementation.
- Review and evaluate a role for remote, wilderness areas in accessing the trauma

system giving consideration to alternate criteria for the most remote areas with fewest resources.

RATIONALE FOR RECOMMENDATIONS:

Identification of the major trauma patient and activation of the trauma system should begin with the first healthcare provider caring for the patient. The multiple levels of care facilities and different types of transportation, including ground, air, and fixed wing, requires careful coordination to assure that the trauma patient has rapid access to the most appropriate level of care. The concept of a regional Central Medical Dispatch center should be carefully considered for implementation. This will require discussions at both the RTAC and the STCC. The specific protocol for system activation should be developed at the RTAC level. The overall guiding principle should be developed by the STCC.

B. Operational and Clinical Components

3) Pre-hospital Care

b) Ambulance and Non-transporting Medical Unit Guidelines

2. Are there statutorily authorized licensing requirements for ground, air, water, and other types of emergency medical transportation?

Yes. The EMS and Injury Prevention Section has broad statutory authority to the licensing of ground and air...transporting and non-transporting services. There is no specific authority for water emergency medical services.

CURRENT STATUS:

The EMS and IP Section have statutory authority for licensing ground and aeromedical ambulance services.

RECOMMENDATIONS:

- None.

RATIONALE FOR RECOMMENDATIONS:

B. Operational and Clinical Components

3) Pre-hospital Care

b) Ambulance and Non-transporting Medical Unit Guidelines

3. What is the minimum level of staffing (number of persons and their level of certification/licensure) of ambulances and non-transporting medical units responding to the scene?

Ground ambulance services:

Basic life support: one EMT-Basic and one First Responder-Ambulance

Intermediate Life Support: One EMT-Intermediate and one First Responder Ambulance

Advanced Life Support: One EMT-Paramedic (or equivalent) and one First Responder Ambulance

Non-transporting services

Basic Life Support: First Responder

Intermediate: EMT-Intermediate

Advanced Life Support: EMT-Paramedic or equivalent

NOTE: Services are not required to maintain staffing at their licensure level 24 hours/day, 7 days per week.

CURRENT STATUS:

No problems identified.

RECOMMENDATIONS:

- None.

RATIONALE FOR RECOMMENDATIONS:

B. Operational and Clinical Components

3) Pre-hospital Care

b) Ambulance and Non-transporting Medical Unit Guidelines

<p>4. What is the minimum level of staffing of ambulances providing inter-facility transfers of a major trauma patient?</p>
<p>The referring physician determines the level of staffing during inter-facility transfers (according to state administrative rules).</p>
<p><u>CURRENT STATUS:</u> The referring physician determines the level of staffing during inter-facility transfers.</p>
<p><u>RECOMMENDATIONS:</u></p> <ul style="list-style-type: none"> • Principles for minimum standards of inter-facility transfer staffing should be developed at the STCC level, and then operationalized at the regional level. • Monitoring of inter-facility transfer vehicle staffing should be included in the continuing quality improvement process. This monitoring should occur at the regional level with reports on activity levels and compliance flowing to the STCC.
<p><u>RATIONALE FOR RECOMMENDATIONS:</u> Appropriate staffing levels for the inter-facility transfer of trauma patients is essential to assure optimal care and avoid potential Emtala violations.</p>
<p>B. Operational and Clinical Components 3) Pre-hospital Care b) Ambulance and Non-transporting Medical Unit Guidelines 5. What are the requirements for on-line and off-line medical direction for ambulance services and non-transporting medical units?</p>
<p>Off-line and online medical direction is required for all units above Basic Life Support. The state protocols outline which procedures can be done in the absence of direct contact with on-line medical control.</p>
<p><u>CURRENT STATUS:</u> Off-line and on-line medical direction is required for all units above basic life support.</p>
<p><u>RECOMMENDATIONS:</u></p> <ul style="list-style-type: none"> • On-line medical direction should be required for lengthy basic life support transports. These protocols should be established statewide.
<p><u>RATIONALE FOR RECOMMENDATIONS:</u> On-line medical direction to assist in management decisions during prolonged transports will enhance the quality of patient care services. To the extent that can be accomplished given the remoteness of some areas, this would be a long-term goal.</p>
<p>B. Operational and Clinical Components 3) Pre-hospital Care b) Ambulance and Non-transporting Medical Unit Guidelines 6. Does the distribution of EMS vehicles allow for appropriate emergency response and transport times (based on patient needs and system resources)?</p>
<p>We do not have a distribution plan for EMS vehicles. This is considered a local level issue rather than a state issue. We do not have designated response areas.</p>
<p><u>CURRENT STATUS:</u> There is no distribution plan for EMS vehicles.</p>
<p><u>RECOMMENDATIONS:</u></p> <ul style="list-style-type: none"> • An assessment of EMS vehicle distribution should be made as soon as possible. • Quality improvement should be utilized to track and refine resource allocation. • EMS vehicle distribution should be monitored at the RTAC levels.
<p><u>RATIONALE FOR RECOMMENDATIONS:</u> An assessment of EMS vehicle distribution will provide useful information about the</p>

adequacy of resources necessary to transport patients between levels of care. Based on that assessment, there may be a need for redistribution or acquisition of more EMS vehicles. EMS vehicle resources and distribution should be monitored through the RTAC continuous quality improvement process as local providers will have first hand knowledge of transportation problems and how they may be best addressed.

B. Operational and Clinical Components

3) Pre-hospital Care

b) Ambulance and Non-transporting Medical Unit Guidelines

- 7. Do the licensing requirements for ambulances and non-transporting medical units specify minimum acceptable patient care equipment for all ages that generally conforms to the recommendations of the American College of Surgeons and/or state lead agency?**

(Note: the portion regarding "state lead agency" is a little confusing. If the licensing requirements are from the state lead agency, then they of course have to meet them!) The Montana licensing requirements are generally consistent with ACS suggested equipment lists.

CURRENT STATUS:

Yes.

RECOMMENDATIONS:

- None.

RATIONALE FOR RECOMMENDATIONS:

B. Operational and Clinical Components

3) Pre-hospital Care

b) Ambulance and Non-transporting Medical Unit Guidelines

- 8. Are there standards, policies and procedures governing hospital destination for ambulances?**

There are not currently hospital destination requirements. In a rural, inclusive system, the ambulance generally transports initially to the only hospital in the area. However, these policies will likely follow the actual facility designation. We are working on criteria for early identification of the major trauma patient by the pre-hospital care provider so the initial receiving facility may initiate a regional inter-facility transportation system prior to the arrival of the patient at the first facility.

CURRENT STATUS:

There are no hospital destination requirements.

RECOMMENDATIONS:

- As stated in the draft regulations, the major trauma patient should go to the highest level institution in the least possible time period. This time frame guide should be established, i.e. highest level facility within 30 minutes including scene and transport time.

RATIONALE FOR RECOMMENDATIONS:

This is a fundamental principal in the care of the trauma patient. Mode of transport should take into account the shortest possible time to the highest possible level of care.

B. Operational and Clinical Components

3) Pre-hospital Care

b) Ambulance and Non-transporting Medical Unit Guidelines

- 9. Does the licensing of ambulance services and non-transporting units include regular inspections and/or an accreditation process based on continuous quality improvement?**

Currently, the licensing process includes an inspection of the services every two years. We are working on a system to base licensure on the existence of a continuous quality improvement program.

CURRENT STATUS:

Regular inspections of ambulances occur every two years. We applaud the efforts to incorporate CQI into the licensure program.

RECOMMENDATIONS:

- None

RATIONALE FOR RECOMMENDATIONS:

B. Operational and Clinical Components

3) Pre-hospital Care

b) Ambulance and Non-transporting Medical Unit Guidelines

10. Are mutual aid agreements among emergency medical service providers in place?

Many local services have mutual aid agreements. This is not required by nor monitored by the lead agency.

CURRENT STATUS:

Mutual aid agreements are not required or monitored by the Lead Agency recommendations.

RECOMMENDATIONS:

- Each RTAC should require and monitor mutual aid agreements, including interstate, among EMS providers, with oversight at the STCC level. RTAC should incorporate this monitoring activity into their quality improvement program.

RATIONALE FOR RECOMMENDATIONS:

Assurance of mutual aid is essential in a State with such long transport times.

B. Operational and Clinical Components

3) Pre-hospital Care

b) Ambulance and Non-transporting Medical Unit Guidelines

11. Are there protocols for the "interface" between ambulance services and non-transporting medical units?

There are not statewide protocols regarding this interface; however, most local areas have some protocols or generally agreed-upon procedures. If a non-transporting unit is licensed at a higher level of service than the ambulance service, members of the non-transporting unit are required to accompany the ambulance.

CURRENT STATUS:

There is a requirement that if a non-transporting unit is licensed at a higher level of service than the transporting ambulance service, members of the non-transporting unit must accompany the ambulance personnel.

RECOMMENDATIONS:

- None.

RATIONALE FOR RECOMMENDATIONS:

B. Operational and Clinical Components

3) Pre-hospital Care

b) Ambulance and Non-transporting Medical Unit Guidelines

12. Does the pre-hospital system have interagency agreements with public safety agencies (for example, police and fire) that address security and safety of the injury scene?

Not on a state level. This may exist at a local level.

CURRENT STATUS:

Interagency agreements may exist at a local level but are not monitored at the state level.

RECOMMENDATIONS:

- The State should mandate minimum standards for interagency agreements, and these

should be implemented at the regional and local levels if they haven't been already.

RATIONALE FOR RECOMMENDATIONS:

This will be particularly important as the system develops its response to disasters.

B. Operational and Clinical Components

3) Pre-hospital Care

b) Ambulance and Non-transporting Medical Unit Guidelines

13. Are there written agreements between ambulance services and non-transporting medical units?

There are state administrative requirements for written dispatch protocols that mandate agreements between non-transporting units and ambulance services in their response areas. These written agreements require that an ambulance be dispatched to all non-transporting unit calls to provide access to transportation for patients under the care of all non-transporting units.

CURRENT STATUS:

There are written agreements between ambulance services and non-transporting medical units.

RECOMMENDATIONS:

- None.

RATIONALE FOR RECOMMENDATIONS:

B. Operational and Clinical Components

3) Pre-hospital Care

b) Ambulance and Non-transporting Medical Unit Guidelines

14. Is there a policy concerning air ambulance service/ground ambulance service dispatch, coordination, and rendezvous?

There is neither state policy nor administrative rule requirement.

CURRENT STATUS:

There are no such policies.

RECOMMENDATIONS:

- Overriding principles should be developed by STCC. The RTAC should formulate policies and use quality improvement to assure their implementation.

RATIONALE FOR RECOMMENDATIONS:

Dispatch, coordination, and rendezvous policies are important to assure rapid transport of the trauma patient to the appropriate facility.

B. Operational and Clinical Components

3) Pre-hospital Care

c) Communications Systems

1. Do you have a communications network that includes a universal system access number, prioritized dispatch, post-dispatch instructions, dispatch-to-ambulance communication, ambulance-to-ambulance communication, ambulance-to-hospital communication, and hospital-to-hospital communication?

Most communications systems are on a local level. There is nearly universal 9-1-1 coverage and state legislation, which provides resources for moving toward statewide, enhanced 9-1-1 coverage. Local areas have dispatch to ambulance, ambulance to ambulance and ambulance to hospital communications. There is not a statewide system for prioritized dispatch or postdispatch instructions. However, these exist in several of the larger jurisdictions. Hospital to hospital communications generally exists, but is not frequently used.

CURRENT STATUS:

Communications systems occur at a local level.

RECOMMENDATIONS:

Development of a communications network is a high priority. The STCC should perform a needs assessment, and based on that, prioritize communication needs. This should require careful coordination with the RTAC. Multiple issues were discussed during the consultation visit that should be incorporated into communication prioritization. These include:

- Enhancement of dispatcher capabilities
- Central communication center
- Appropriate funding for dispatchers
- Development of enhanced 9-1-1 capabilities for cellular phones
- Use of newer technologies such as GPS

RATIONALE FOR RECOMMENDATIONS:

Time from injury to definitive care can be decreased with efficient and a state-of-the-art communication system. Other benefits of having a coordinated and integrated communication system include better resource allocation and efficiency, the ability to coordinate response during mass-casualty or other major disaster events, and frequency sharing between multiple agencies and jurisdictions so that communication can occur during rescue operations.

B. Operational and Clinical Components

3) Pre-hospital Care

c) Communications Systems

2. Does the system have coordination of medical direction and dispatch?

Not in most areas of the state.

CURRENT STATUS:

There is no coordination of medical direction and dispatch in most areas of the state.

RECOMMENDATIONS:

- This could be accomplished through a regional Central Medical Dispatch.

RATIONALE FOR RECOMMENDATIONS:

Coordination of medical direction with dispatch is particularly important in the State of Montana where there are multiple care facilities and modes of transportation, which may be used for any trauma patient.

B. Operational and Clinical Components

3) Pre-hospital Care

c) Communications Systems

3. Have you implemented an EMS dispatch curriculum to train communications personnel? If no, describe plans for an EMS dispatch curriculum.

There is not a statewide EMS dispatch curriculum. Tentative discussions have been held with the state 9-1-1 office and with the state law enforcement academy about a collaborative effort to establish EMS dispatch training. Several local jurisdictions do have EMD training.

CURRENT STATUS:

There is no State EMS dispatch curriculum.

RECOMMENDATIONS:

- This should be pursued, and is an important agenda item for prioritization of communication needs.

RATIONALE FOR RECOMMENDATIONS:

A State curriculum would help build a more cohesive, enhanced communication system.

B. Operational and Clinical Components

3) Pre-hospital Care

c) Communications Systems

<p>4. Do you have a public access communications system (911 or enhanced 911)?</p>
<p>Yes. Well over 95% of the state is covered by basic 9-1-1. Several areas have enhanced 9-1-1; there is state funding to promote conversion to enhanced 9-1-1.</p>
<p><u>CURRENT STATUS:</u> There is State funding to promote conversion to enhanced 9-1-1 calls for landlines. There is a pilot study in place for enhanced 9-1-1 calls with cellular phones.</p>
<p><u>RECOMMENDATIONS:</u></p> <ul style="list-style-type: none"> • Incorporate enhanced 9-1-1 calls into cellular phones.
<p><u>RATIONALE FOR RECOMMENDATIONS:</u> It will be important to be proactive in incorporating enhanced 9-1-1 capability into cellular phones with the lengthy distances and remote locations in Montana. This should be an agenda item for the discussion of communication prioritization.</p>
<p>B. Operational and Clinical Components 3) Pre-hospital Care c) Communications Systems 5. Does the 911 system receive all public calls that request EMS response to trauma patients?</p>
<p>Yes. There may be an occasional call, which is received by a private ambulance agency, but this is not common.</p>
<p><u>CURRENT STATUS:</u> Yes.</p>
<p><u>RECOMMENDATIONS:</u></p> <ul style="list-style-type: none"> • None.
<p><u>RATIONALE FOR RECOMMENDATIONS:</u></p>
<p>B. Operational and Clinical Components 3) Pre-hospital Care c) Communications Systems 6. How frequently are dispatch-to-ambulance, hospital-to-ambulance, and hospital-to-hospital communication attempts unsuccessful? Are there geographic areas where communication cannot be established?</p>
<p>We do not have data regarding the frequency of attempts, which are not successful. There are geographic areas where two-way radio communication is difficult and cellular communication is unavailable. These areas are not maintained in a statewide database.</p>
<p><u>CURRENT STATUS:</u> Geographic areas may in some cases make two-way communication and cellular communication difficult or unavailable.</p>
<p><u>RECOMMENDATIONS:</u></p> <ul style="list-style-type: none"> • An assessment of communication availability needs to be completed. This could be accomplished through the quality improvement process, and should include filters to identify issues related to cellular phone "dead zones". • The State should be proactive in monitoring and implementing newer technologies that may improve communication capabilities. This topic should be an agenda item for the discussion of communication prioritization.
<p><u>RATIONALE FOR RECOMMENDATIONS:</u> Communication capability is important in this State with such long transport times.</p>
<p>B. Operational and Clinical Components 3) Pre-hospital Care c) Communications Systems</p>

7.	Are all dispatch centers, ground and air ambulances, and base stations equipped with adequate communications systems?
<p>(Note: This is a difficult question. What is adequate? The use of base station here does not make much sense.)</p> <p>Most of these locations have communications equipment. The level of adequacy is not known. Many of the local EMS communications systems are badly outdated and in need of replacement.</p>	
<p><u>CURRENT STATUS:</u> The adequacy of communication systems is not known. Many local communication systems are outdated.</p>	
<p><u>RECOMMENDATIONS:</u></p> <ul style="list-style-type: none"> • The acquisition of legislative funding for emergency medical services should specifically target communications. This effort should be preceded by a needs assessment of EMS communication equipment. 	
<p><u>RATIONALE FOR RECOMMENDATIONS:</u> Adequate communication systems are an essential component of the EMS system.</p>	
B.	Operational and Clinical Components
3)	Pre-hospital Care
c)	Communications Systems
8.	Are EMS dispatch protocols in place?
<p>There are not statewide dispatch protocols. Many local jurisdictions have EMS dispatch protocols.</p>	
<p><u>CURRENT STATUS:</u> There are no statewide EMS dispatch protocols.</p>	
<p><u>RECOMMENDATIONS:</u></p> <ul style="list-style-type: none"> • The RTAC should review the local EMS dispatch protocols as they relate to the care of the trauma patient. 	
<p><u>RATIONALE FOR RECOMMENDATIONS:</u> The multidisciplinary RTAC may improve on current EMS dispatch protocols.</p>	
B.	Operational and Clinical Components
3)	Pre-hospital Care
c)	Communications Systems
9.	Are priority dispatch and post dispatch protocols in place?
<p>Not on a statewide basis.</p>	
<p><u>CURRENT STATUS:</u> There are no priority dispatch and post dispatch protocols in place. The EMS and Injury Prevention Section has no authority to develop or implement priority dispatch and post dispatch protocols for trauma.</p>	
<p><u>RECOMMENDATIONS:</u></p> <ul style="list-style-type: none"> • The State needs to work collaboratively with those responsible for overseeing 9-1-1 dispatch standards. Representation on the STCC by a 9-1-1 representative would be helpful in this regard. There should be general principles developed by STCC on what dispatch and post dispatch protocols for trauma patients should be. 	
<p><u>RATIONALE FOR RECOMMENDATIONS:</u> With long response times, priority dispatch and post dispatch times are particularly important.</p>	
B.	Operational and Clinical Components
3)	Pre-hospital Care
c)	Communications Systems
10.	Describe the dispatch-to-ambulance, dispatch-to-hospital, ambulance-to-hospital, and hospital-to-hospital

communications network.	
Most of the EMS communications network is VHF and operates on a local jurisdiction basis. There is a statewide frequency allocation manual that outlines public safety, EMS and mutual aid frequencies. There is a state plan for allocation of frequencies and for coordination of the four EMS frequencies (155.280, 155.340, 155.325 and 155.385)	
<u>CURRENT STATUS:</u> Most EMS communication is VHF.	
<u>RECOMMENDATIONS:</u> As noted above, a needs assessment should be performed on the communications network, followed by discussion of prioritization of communication needs.	
<u>RATIONALE FOR RECOMMENDATIONS:</u>	
B.	Operational and Clinical Components
	3) Pre-hospital Care
	c) Communications Systems
	11. Identify and describe how communications systems interrelate during mass casualty and disaster incidents.
This relationship is not well established nor tested on a statewide basis.	
<u>CURRENT STATUS:</u> Communication systems for mass casualty or disaster incidents is not well established or tested.	
<u>RECOMMENDATIONS:</u>	
<ul style="list-style-type: none"> The communication systems should be tested during disaster drills, and recommendations for improvement should be based on performance during those drills. 	
<u>RATIONALE FOR RECOMMENDATIONS:</u> Tests of communication systems during disaster drills will provide excellent information about the adequacy of the system.	
B.	Operational and Clinical Components
	3) Pre-hospital Care
	c) Communications Systems
	12. Is there a communications quality improvement program?
NO.	
<u>CURRENT STATUS:</u> There is no communication quality improvement program.	
<u>RECOMMENDATIONS:</u>	
<ul style="list-style-type: none"> Establish a communication quality improvement program. 	
<u>RATIONALE FOR RECOMMENDATIONS:</u> A communication quality improvement program to discover gaps in communication is important in an overall needs assessment of communication. This would best be accomplished at the local and regional level, with oversight by the STCC.	
B.	Operational and Clinical Components
	3) Pre-hospital Care
	d) Emergency/Disaster Preparedness Plan
	1. When was the last update of the pre-hospital emergency/disaster plan?
There has never been a good statewide pre-hospital emergency/disaster plan.	
<u>CURRENT STATUS:</u> There has never been a good statewide disaster plan.	
<u>RECOMMENDATIONS:</u>	

<ul style="list-style-type: none"> • Develop a statewide disaster plan using the RTAC and STCC. <p><u>RATIONALE FOR RECOMMENDATIONS:</u> Subcommittees should be developed at both the RTAC and STCC level to address a pre-hospital emergency/disaster plan. There is a need to immediately address in these subcommittees Y2K and bioterrorism emergency/disaster plans. These plans could serve as models for an overall statewide disaster plan.</p>
<p>B. Operational and Clinical Components</p> <p>3) Pre-hospital Care</p> <p>d) Emergency/Disaster Preparedness Plan</p> <p>2. Do representatives of the pre-hospital management agency, local EMS system, local government, and private sector believe that their emergency/disaster preparedness plans are well integrated?</p>
<p>We don't know.</p>
<p><u>CURRENT STATUS:</u> See the response to B.3.d.1.</p> <p><u>RECOMMENDATIONS:</u></p> <p><u>RATIONALE FOR RECOMMENDATIONS:</u></p>
<p>B. Operational and Clinical Components</p> <p>3) Pre-hospital Care</p> <p>d) Emergency/Disaster Preparedness Plan</p> <p>3. What are the responses of the pre-hospital management agency, local EMS system, local government, and private sector representatives to the most recent periodic educational exercise?</p>
<p>We don't have a good handle on this.</p>
<p><u>CURRENT STATUS:</u> See B.3.d.1.</p> <p><u>RECOMMENDATIONS:</u></p> <p><u>RATIONALE FOR RECOMMENDATIONS:</u></p>
<p>B. Operational and Clinical Components</p> <p>3) Pre-hospital Care</p> <p>d) Emergency/Disaster Preparedness Plan</p> <p>4. How many disaster plans are functional in the region? Have attempts been made to consolidate these into one plan?</p>
<p>We don't have information about this.</p>
<p><u>CURRENT STATUS:</u> See B.3.d.1.</p> <p><u>RECOMMENDATIONS:</u></p> <p><u>RATIONALE FOR RECOMMENDATIONS:</u></p>
<p>B. Operational and Clinical Components</p> <p>4) Definitive Care Facilities</p> <p>a) Trauma Care Facilities</p> <p>1. Are there identified designation standards for trauma centers?</p>
<p>Trauma facility criteria, administrative rules, and designation procedures are in the completion stages (see appendix D and E).</p>

CURRENT STATUS:

There are currently standards for designation of trauma centers in draft form. These were provided as an appendix, although there is some difficulty in correlating answers with the numbering system of the appendices. These standards are derived in large part from the "Resources for Optimal Care of the Injured Patient" document produced by the Committee on Trauma of the American College of Surgeons. As such, they appear to be appropriate for developing a designation process for the statewide trauma system.

RECOMMENDATIONS:

- These draft standards should be further analyzed at the RTAC and STCC to avoid obvious conflicts with local capabilities and jurisdiction. They should then be implemented.
- The State should include a provisional status to initiate centers that are near ready for designation into the system to allow for further education, and implementation prior to formal integration into the system as a designated center.
- The ability to place centers on probation with the potential for de-designation must be clearly spelled-out and defensible in court. Although difficult to achieve, the ability to de-designate must be available and based on outcomes and other defensible criteria. These should be clearly stated in the designation process.
- The State needs to adopt clearly stated criteria for the designation of two facilities of equal level in the same city or geographic catchment area.

RATIONALE FOR RECOMMENDATIONS:

It is not ideal to have two Level III or two Level II institutions in the same geographic location or catchment area. This type designation could be a detriment to system development and may lead to excessive expensive competition and have a negative impact on patient care. If this joint process is to occur, it must be based on a needs assessment and documentation that one center cannot provide the definitive care for patients in the catchment area, and thus, the resources of both institutions are required to provide the appropriate level of care for the geographic area. In this setting, the two institutions must work closely together to analyze their capabilities and resources and to define the logistics of providing coverage of highest quality possible to the patient population. The hospitals must jointly coordinate and develop quality assurance and outcome mechanisms to monitor system resource needs, over duplication and costs.

Assessments of outcomes, volume, and other components of quality assurance activities must be jointly provided to ensure that equal and consistent care is provided to the patient. These decisions must be made as a tightly committed collaborative effort on the part of the two institutions, and not as a means for competitive competition for patients. This arrangement must be re-evaluated at each redesignation cycle. The advancement of one institution to a higher level institution with appropriate transfer of the most critically ill patients from the lower level to higher level institution should be the ultimate goal of the system.

B. Operational and Clinical Components
4) Definitive Care Facilities
a) Trauma Care Facilities
2. Is there a process for designation of trauma centers?

Trauma facility criteria, administrative rules, and designation procedures are in the completion stages (see appendix D and E).

CURRENT STATUS:

A process for designation of trauma centers is documented in the appendix in draft form. This needs to be considered by the RTAC and STCC for formal adoption of these criteria.

RECOMMENDATIONS:

- This process needs to be clearly stated so that it is understandable to all institutions

potentially involved in the trauma system.

- A process and criteria for de-designation need to be clearly delineated. Opportunities for rebuttal and for appeal must be provided to ensure equity and defensibility.
- The State designation authority should be given the power to limit the number of various levels of trauma centers in a given geographic area. This is particularly true in urban areas. The State authority should limit the number and determine the distribution of Level II, Level III, Level IV, and Level V equivalent institutions within the same catchment area.

RATIONALE FOR RECOMMENDATIONS:

While the goal is to have an inclusive system with all institutions potentially participating, not all institutions should be permitted to achieve any level they so desire. The levels of institution designation should be based on patient demographics, geography of transport and times involved, and the overall needs of the populous to provide the most optimal and cost effective care possible.

B. Operational and Clinical Components

4) Definitive Care Facilities

a) Trauma Care Facilities

3. Do you have an estimate of the number of trauma patients?

No. These numbers will continue to be incomplete unless we are able to install an Emergency Department data set program in every facility, or unless we are able to install a Trauma Registry in every facility for data on major trauma patients.

We do have the number of major trauma patients seen in those facilities using the Hospital Trauma Register and reporting it to the state.

CURRENT STATUS:

There are currently no well-defined mechanisms for identifying the total number of trauma patients. This is a serious deficiency in the current trauma system and liability to implementation of a statewide trauma system in the future. Currently, this information is contained within the hospital association database.

RECOMMENDATIONS:

- There must be access to all injured patient discharge data.
- The Hospital Association database must be made accessible to the State Department of Health for the benefit of the public.
- Data should be collected at the regional level through the RTAC and centralized through the statewide trauma registry for analysis of need and distribution of facilities designation.

RATIONALE FOR RECOMMENDATIONS:

The distribution of facilities and the level of the trauma care facilities must be based on the needs of the community. Without these data, the process becomes overly political and potentially excessively costly with a negative impact on quality of patient care. Only based on need can appropriate identification and determination be made to implement trauma care center designation. While portions of this data are available from hospital registries and fatality statistics it is ill conceived to base the development of the system on this haphazard database.

B. Operational and Clinical Components

4) Definitive Care Facilities

a) Trauma Care Facilities

4. Do you have an estimate of the number of trauma surgeons (general surgeons, neurosurgeons, and orthopaedic surgeons)?

This information is available through the Montana Medical Association. Neurosurgeons

are available in Great Falls, Butte, Kalispell, Billings and Missoula. Surgeons and orthopaedic surgeons are more plentiful, but remain unavailable in the majority of the health care facilities throughout the state.

CURRENT STATUS:

This information was not provided. There does appear to be potential mechanisms available to obtain these data.

RECOMMENDATIONS:

- The availability of general surgeons, neurosurgeons, orthopedic surgeons, ER physicians, and other physicians throughout the State should be obtained, collated and updated on an annual or regularly based interval. This information can be obtained through the Montana Medical Association or through a survey mechanism via each of the licensed facilities in the State.
- The Department of Health should provide funding as necessary to obtain these data for this critical activity.
- Collection and collation of this data by the RTAC may be an optimal approach and provide an opportunity to involve them in regional trauma planning activities.

RATIONALE FOR RECOMMENDATIONS:

These data need to be collected, collated and integrated at the State and regional level. Needs assessment must be balanced against resources to optimize patient outcome.

B. Operational and Clinical Components

4) Definitive Care Facilities

a) Trauma Care Facilities

5. Do you have documentation of the available resources in the acute care facilities?

A resource assessment was completed in 1993-4 and has not been repeated.

This information will be available during the facility designation procedure and at the time of the designation visit.

A mail survey of pediatric equipment and education in all healthcare facilities will be completed this summer.

CURRENT STATUS:

There is little statewide information available.

RECOMMENDATIONS:

- The resource assessment performed in the past needs updating. Obtaining these data through the RTAC should be a major component of their activities in the initial stages of the trauma system development.
- The use of trauma specific hospital licensing data should also be integrated into this data set. The RTAC should take the lead for collecting and collating this information for their respective regions.

RATIONALE FOR RECOMMENDATIONS:

From documents provided to the site visit team, much of these data appear to be available from other data sources, such as the Montana County Health Profile, 1999, Hospital Association, etc. These data sources need to be collated to determine what the present availability of trauma resources are. Only through a thorough understanding of both injury volumes and resources can a rational plan of matching these resources to patient needs be developed.

B. Operational and Clinical Components

4) Definitive Care Facilities

a) Trauma Care Facilities

6. Are all acute care facilities willing to provide at least a minimum data set on trauma patients?

The majority of healthcare facilities are willing to commit personnel and computer

resources to collect Trauma Registry data. Efforts will be made to facilitate the installation and utilization of the Trauma Registry in the remaining facilities.

CURRENT STATUS:

Currently, only major institutions are willing to provide data on trauma patients. It is implied that the commitment of personnel and computer resources required make collection of data in smaller institutions problematic.

RECOMMENDATIONS:

- Collection of a minimal data set for each and every patient admitted for trauma system care is required by the State Statutes. This mandate should be enforced and all institutions should provide the minimal data set.

- A core of financial data should be added to the minimal data set. These data are critical and should be mandated.

RATIONALE FOR RECOMMENDATIONS:

Resources required for hardcopy reporting of trauma patients is often times easier for the small institution to achieve. As such, there is no reason for any institution not to provide the minimum data set on each trauma patient. These data are critical to analyze the appropriateness of the triage and transfer of patients within the system and to ensure that the injured patient has access to the appropriate level of care in a timely fashion. Quality mandates that these data be available. Lastly, financial data is necessary to substantiate the financial inequities that are currently in place in the care of the injured patient and the need for financial support.

B. Operational and Clinical Components

4) Definitive Care Facilities

a) Trauma Care Facilities

7. Is the designation process of trauma centers based on the determination of need?

Yes--- we need them all.

It was a decision of the Trauma Task Force in early 1992 that our state would have an inclusive trauma system in an effort to optimize the care in each of our facilities. It is not uncommon for our patients to face an hour transport to a clinic facility for resuscitation and stabilization and then endure an hour transport by air to a regional trauma center. However, a Rural Preventable Mortality Study conducted on patients who died in Montana during 1992 demonstrated that we had a significant preventable mortality and the majority of our patients received inadequate or inappropriate care. It is obvious that, because we cannot bypass these small facilities, we must find ways to assist them in optimizing patient care.

CURRENT STATUS:

As currently planned, the designation of trauma centers does not appear to be based on need. This is a critical failing in the current draft plans for implementation of designated trauma centers and development of a statewide trauma system. The trauma task force decided that all facilities are needed to provide trauma care in the State of Montana. There appears to be a significant misunderstanding of the concept of an inclusive trauma system.

RECOMMENDATIONS:

- It is appropriate to implement an inclusive trauma system. However, the over-riding principle is that the severely injured patient gets to the highest level facility in the shortest time possible.

- Utilization of triage, including bypass of lower level trauma centers and/or immediate assessment and transfer from lower level to higher-level trauma center is mandatory.

- In the setting of two equally accessible institutions providing the same level of care, the allocation of patients should be distributed based on regional protocols. There must be a strong collaborative effort in the development of standards of care, quality

improvement, and practice guidelines to ensure optimal patient care.

RATIONALE FOR RECOMMENDATIONS:

The current implication that if a Level II and Level III center are both present in an inclusive system, both should receive patients equally is incorrect. The inclusive system allows and encourages that both a Level II and Level III institution may exist in the same city, but that the severely injured patient, (based on objective criteria) be triaged and/or transported immediately to the Level II institution to optimize outcome. Thus, in an inclusive system, all institutions can participate in the system, but a set of standards must be implemented to assure appropriate triage so that the severely injured patient be delivered only to the highest level of care available. This severely injured patient population consists of only 10-15% (maximum) of the overall injured patient population. The remaining 85-90% of the injured patient population can be cared for at other institutions within the geographic area. Thus, a severely injured patient will bypass a nearby lower level institution to get to the higher level institution if transport times permit. Triage and/or immediate transfer produces a high level of quality care and placement of the injured patient in the institution most appropriate for optimal outcome (Grossman et al, Journal of Trauma, 1995, Vol. 38, pp. 14-21).

B. Operational and Clinical Components

4) Definitive Care Facilities

a) Trauma Care Facilities

8. is there a process and authority for redesignation and/or de-designation?

Yes. See Draft Trauma System Administrative Rules (Appendix D)

CURRENT STATUS:

There are approaches to the designation and de-designation process in draft form.

RECOMMENDATIONS:

- More objective criteria in the designation, redesignation, and de-designation process should be considered.
- There should be alternatives for an intermediate step such as a provisional status prior to formal designation to allow educational and implementation processes to be completed
- A probationary status that allows an institution to correct deficiencies prior to a formal de-designation process should also be in place.

RATIONALE FOR RECOMMENDATIONS:

The power to designate, redesignate, and de-designate permits the State authority to control numbers and levels of institutions to optimally match needs with resources and to avoid redundant, expensive and inefficient care. All processes must be objective and standardized to defend against any legal challenges.

B. Operational and Clinical Components

4) Definitive Care Facilities

a) Trauma Care Facilities

9. Do you have a definition of major trauma patient?

Major trauma includes any patient who is known or reasonably suspected to have sustained an injury that merits treatment by a trauma care team capable of immediate surgery. Case criteria include an injury diagnosis (ICD-9-CM N-Code 800.00 through 959.9) and one or more of the following:

- Transfer from another hospital
- Admission to intensive care
- Hospitalization for 3 or more days
- Death

CURRENT STATUS:

The information provided during the site visit indicated that an appropriate definition of the major trauma patient exists.

RECOMMENDATIONS:

- All facilities, not just hospitals, must report to the State, RTAC and STCC, a minimal data set on all trauma patients.

RATIONALE FOR RECOMMENDATIONS:

It should be noted that this is a retrospective definition to obtain trauma registry data for quality assessment and to determine if appropriate triage and transfer occurred. Only through this complete database can one truly assess quality and ensure that optimal care is being provided. The definition of a major trauma patient for inclusion in the trauma database allows one to assess whether the protocols utilized for triage and transfer are indeed appropriate. Consequently data will be available to identify those protocols in need of modification based on patient injury severity and resource needs. Please refer to Criteria for Triage and Transfer under the Pre-hospital section.

B. Operational and Clinical Components

4) Definitive Care Facilities

a) Trauma Care Facilities

10. Do you have a continuous quality improvement process in place for the trauma system?

The continuous quality improvement process is in the draft phase (see Appendix D). This process will be utilized at both the regional and state level.

CURRENT STATUS:

The CQI process is in draft phase and was included as an appendix. The intent is to utilize this process at the RTAC level primarily, with further oversight by the STCC.

RECOMMENDATION:

- This preliminary plan appears to be an appropriate guideline for development of State and region-wide plans. Once the plans are refined, they should be adopted and implemented without delay.

RATIONALE FOR RECOMMENDATIONS:

The most feasible method for implementation is through the RTAC with a subcommittee structure. The primary focus and activity of the RTAC QI Subcommittees should be system monitoring and CQI activities. The overall results, however, must be integrated through the RTAC and the STCC to ensure that a corrective action planning and implementation is coordinated throughout the system. Again, to achieve this goal, a complete and accurate database must be available to the RTAC and STCC.

B. Operational and Clinical Components

4) Definitive Care Facilities

b) Inter-facility Transfer

1. Do you have written transfer agreements between trauma centers and other acute care facilities in the system?

Each trauma facility is responsible for obtaining transfer agreements for patients who need care that is unavailable within their facility. Templates will be available to facilitate all facilities that have not completed the agreements.

CURRENT STATUS:

Each trauma facility is responsible for obtaining transfer agreements for patients who require a higher level care than can be obtained within that facility. Templates will be available.

RECOMMENDATIONS:

- In addition to templates, standardized policies must be in place, and administrative code enacted to ensure that the transfer agreements facilitate patient access to the appropriate level of care.

RATIONALE FOR RECOMMENDATIONS:

Transfer agreements are being required, however, there is no standardization in place. Without standardization of expectations, it will be very difficult to improve flow through

the trauma system.	
B. Operational and Clinical Components 4) Definitive Care Facilities b) Inter-facility Transfer 2. Do you have written transfer agreements for injured patients with special problems such as: <ul style="list-style-type: none"> • Burns • Pediatrics • Spinal cord Injury • Brain Injury • Rehabilitation • Other injuries that cannot be optimally treated at your facility 	
<p>Each trauma facility is responsible for obtaining transfer agreements for facilitating referrals for patients with special care needs or those for whom care that is unavailable within their facility.</p> <p>The majority of major burn patients are transferred out-of-state. Pediatric Intensive Care facilities are located in Great Falls, Missoula and Billings. There is no plan to provide specialized Pediatric Facility Designation in Montana.</p>	
<p><u>CURRENT STATUS:</u> Similar to B.4.b.1.</p> <p><u>RECOMMENDATIONS:</u></p> <ul style="list-style-type: none"> • Similar to B.4.b.1. <p><u>RATIONALE FOR RECOMMENDATIONS:</u> Once again, in addition to mandating transfer agreements, objective standards must be utilized to facilitate uniform implementation based on the level of care and resources needed.</p>	
B. Operational and Clinical Components 4) Definitive Care Facilities b) Inter-facility Transfer 3. Do you have written transfer agreements between designated trauma centers and rehabilitation centers for patients with the traumatic diagnoses of SCI, TBI (severe/moderate/mild), multiple trauma injuries, amputations, and burns?	
<p>We have rehabilitation centers located in close approximation to the regional trauma centers. Each of the three regions have transfer agreements with specialty centers out-of-state that they utilize for patients with needs that exceed the capabilities of the local centers. There are not always written transfer agreements though.</p>	
<p><u>CURRENT STATUS:</u> The current approach appears to be compatible with the resources available.</p> <p><u>RECOMMENDATIONS:</u></p> <ul style="list-style-type: none"> • Quality assurance based on outcome should be utilized to identify issues that need to be rectified or for other changes in the system. <p><u>RATIONALE FOR RECOMMENDATIONS:</u></p>	
B. Operational and Clinical Components 4) Definitive Care Facilities b) Inter-facility Transfer 4. Do you have a plan that defines objective criteria for the transfer of injured patients from designated trauma care facilities to contracted hospitals and physicians?	
<p>This issue has not been addressed as we have very few contracted services in Montana.</p>	
<p><u>CURRENT STATUS:</u></p>	

Currently, this issue has not been addressed. This is a critical missing component of the current draft plans for statewide trauma system implementation.

RECOMMENDATIONS:

- Standardize objective criteria defining the patients for transfer from one level institution to the next higher level. The Committee on Trauma of the American College of Surgeons "Resources for Optimal Care of the Injured Patient" is an ideal resource to initially develop these criteria.

RATIONALE FOR RECOMMENDATIONS:

Criteria for transfer from a lower institution to a higher level institution should be incorporated into the draft rules now being developed and discussed. They are extremely difficult to add after implementation. Please refer to the pre-hospital discussion on triage criteria and the need for transfer policies to be in place to ensure that a severely injured patient does not remain at a lower level trauma care center rather than be expeditiously transferred to the most appropriate care facility.

The object is to get the severely injured patient to definitive care in the shortest time possible. Again, it is essential to capture all major trauma patients in the database to track access to care, and to ensure that inter-facility transfer policies are utilized to optimize patient care.

- B. Operational and Clinical Components
- 4) Definitive Care Facilities
 - b) Inter-facility Transfer
 - 5. Do your transfer agreements deal with the mode of transportation and the type and qualifications of transport personnel?

Our inter-facility transport protocol will address this issue and has not been drafted.

CURRENT STATUS:

Inter-facility transport protocols have not been drafted as yet.

RECOMMENDATIONS:

- Based on objective criteria for severity of injury, select modes of transportation should be recommended. Due to weather and geography, these cannot be mandated, but should be strongly recommended as guidelines.

RATIONALE FOR RECOMMENDATIONS:

These guidelines should not be left to individual institution development, but should be provided as templates by the State as developed by the STCC. The RTAC should develop the operational components of these guidelines based on local circumstances and regional logistics of resources, geography and weather.

- B. Operational and Clinical Components
- 4) Definitive Care Facilities
 - b) Inter-facility Transfer
 - 6. Do your transfer agreements comply with COBRA regulations?

The Montana Hospital Association provides templates for adaptation at the facility level.

CURRENT STATUS:

Transfer agreements are not currently in use. Templates are provided, but the actual utilization of transfer agreements are not known.

RECOMMENDATIONS:

- The standards set forth by the State trauma system should ensure compliance with COBRA regulations.

RATIONALE FOR RECOMMENDATIONS:

- B. Operational and Clinical Components

4) **Definitive Care Facilities**
c) **Medical Rehabilitation**

1. **Is there a joint liaison committee composed of clinical and administrative representatives from the designated trauma centers and rehabilitation centers?**

No. However, because of the proximity of the rehab centers to the regional trauma centers, physiatrists from the regional rehabilitation centers are members of the multidisciplinary trauma committees and are members of the inpatient rehabilitation teams at the regional trauma centers.

CURRENT STATUS:

A joint liaison committee for rehabilitation does not exist.

The State of Montana has three Rehab Centers :

- **Great Falls (two hospitals merged with consolidation of Trauma Centers and Rehab)**
- **Missoula**
- **Billings**

These Rehab Centers are each in close proximity to a Regional Trauma Center. Because of the proximity of the Physiatrists from each of the Rehab Centers, they should be encouraged to participate on the Regional Multidisciplinary Trauma Committees, possibly the inpatient rehab teams.

These Rehab Centers each have a Medical Director and function as separate units. They all have adequate, and in fact some excess, capacity given the inadequate funding for rehab. The geographic distribution is favorable for the needs of trauma patients in the State (north, west, and east).

Funding for the rehab needs of trauma patients is inadequate.

The hospitals serving as Regional Trauma Centers state that rehab efforts are initiated on all appropriate trauma patients in the acute care setting. All patients with neurological deficit and multiple injuries are referred to the Regional Trauma Centers where there is aggressive early involvement of rehab personnel.

RECOMMENDATIONS:

- **Seek increased funding for rehab of trauma patients (see section on Strategy for Increased Funding for Trauma Patients). This will require data on the magnitude of the rehab problem and the increase in quality of care and cost effectiveness of this effort.**
- **Create a Rehab Subcommittee of the STCC. This should include the three Medical Directors of the Rehab Units, plus appropriate administrative representatives from the hospitals and EMS system. This might also include a patient advocate (i.e., prior rehab patient such as a paraplegic who is functioning well).**
- **Include, in State rules, the requirement for documentation of early rehab efforts on all appropriate trauma patients.**
- **Rehab Subcommittee should coordinate rehab statewide. This Subcommittee should address the points in B-4,5,6,7**

RATIONALE FOR RECOMMENDATIONS:

The rehab phase of care of the injured patient has been generally neglected by trauma centers and systems. This trauma consultation process considers rehab vital to providing optimal care. These rehab efforts must be initiated as soon as possible on all trauma patients who require such care. As we develop outcome measures beyond just survival ("preventable deaths") the value of aggressive and early rehab efforts will become more obvious. These outcome measures must include quality of life and return to functional

activity. There is now evidence (ref: Ellen Mackenzie, Ph.D. Johns Hopkins University, School of Public Health) to support the cost effectiveness and therefore the dedication of resources to this phase of care. Funding of the un or underinsured patient is a universal problem with rehab. Consequently, we must work toward national, as well as State, initiatives to address this problem.

The State of Montana has the opportunity with a statewide trauma system, a Trauma Registry, Regional Trauma Centers, and three regional Rehab Centers, to gather the data and build the case for funding this phase of care. Patient advocacy on this issue has been extremely beneficial in other systems (resource: Bruce Cornell, a member of the Scripps Trauma Centers Board of Advisors now living in a rural setting in Northern California. Bruce is paraplegic from a truck injury years ago. He was treated at our trauma center. He is now an extremely successful athlete competing in wheelchair races, teaches skiing, sky dives, ski racing, water skiing, etc.). Dr. Eastman will be happy to put him in touch with your rehab committee if you desire. He is a powerful spokesperson for trauma care and rehab.

- B. Operational and Clinical Components**
4) Definitive Care Facilities
c) Medical Rehabilitation
2. Are there existing trauma system policies and procedures that appropriately address each of the following issues:
- a. Transfer agreements and documentation
 - b. treatment guidelines for acute and rehabilitation care
 - c. evaluation of patient outcomes and system of care
 - d. data exchange procedures
 - e. alternative plans for unfunded patients
 - f. long-term outcome research

All policies and procedures are either in the early draft phase or have not been addressed at this time.

CURRENT STATUS:

These critical policies and procedures are not available at this time.

RECOMMENDATIONS:

- The Trauma Rehabilitation Committee as recommended in B.4.C.1 should address these policies and procedures as a first order of business.

RATIONALE FOR RECOMMENDATIONS:

As stated in B.4.C.1

- B. Operational and Clinical Components**
4) Definitive Care Facilities
c) Medical Rehabilitation
3. Is there a standardized set of rehabilitation data (for example, patient outcome data) that rehabilitation facilities must collect and report to the trauma system database?

Not at this time, although the additional information gained is rehabilitation data could be included or added to the Trauma Registry would improve information about the continuum of patient care and would make outcome research more quantifiable.

CURRENT STATUS:

There is no standardized set of rehab data collected at this time.

RECOMMENDATIONS:

- As noted in your response to this question, these data points could and should be added to your statewide Trauma Registry.

RATIONALE FOR RECOMMENDATIONS:

It will be the accrual of accurate outcome data that will be the greatest lever to cause the funding of rehab care in your system.

- B. Operational and Clinical Components**

4) **Definitive Care Facilities**
 c) **Medical Rehabilitation**
 4. **Do the rehabilitation centers have a set of minimum requirements/qualifications that the physician leaders must meet (for example, Medical Director of SCI Program, Medical Director of TBI Program, Medical Director of Rehabilitation)?**

Our rehabilitation centers are quite small (30 to 40 beds), all are CARF certified.

CURRENT STATUS:
 The existing three rehab centers have about 30 to 40 beds each. All are CARF certified. There do not appear to be system wide minimum requirements/qualifications for physician leaders.

RECOMMENDATIONS:
 • This should be an agenda item for the STCC Rehabilitation Committee—to establish these criteria.

RATIONALE FOR RECOMMENDATIONS:
 Standardization of the requirements/qualifications of the Medical Directors across the Montana system would ensure that this critical phase of care of the injured patient has uniformity and minimal inappropriate variation. It is well established that by decreasing inappropriate variation we increase QUALITY and decrease costs with resultant increase in value.

VALUE = QUALITY/COST
 NB – This rationale applies equally to B.4.C.3 above.

B. **Operational and Clinical Components**
 4) **Definitive Care Facilities**
 c) **Medical Rehabilitation**
 5. **Is there an exchange of outcome data among the trauma, acute care, and rehabilitation facilities?**

Although it is informal, the rehabilitation facilities often update the trauma surgeon/trauma coordinator about patient outcome.

CURRENT STATUS:
 Rehab centers have only informal communication with acute care facilities.

RECOMMENDATIONS:
 • Formalize these communications between rehab centers and all acute care facilities and providers who have an interest in the particular patient (including the primary care physician who will have the ongoing relationship with that patient and family).

RATIONALE FOR RECOMMENDATIONS:
 In addition to providing specific information regarding diagnosis, evaluation, and rehab treatment plans this communication would be excellent public relations with the wider medical community to build the basis for support of your rehab centers (i.e., funding).

B. **Operational and Clinical Components**
 4) **Definitive Care Facilities**
 c) **Medical Rehabilitation**
 6. **Within the trauma system, what mechanisms are in place to ensure that rehabilitation care is strongly integrated into all phases of acute, primary, and community care?**

This issue has not been addressed.

CURRENT STATUS:
 This issue has not been addressed.

RECOMMENDATIONS:
 • Refer to discussion in B.4.C.5

rc
cor

RATIONALE FOR RECOMMENDATIONS:

B. Operational and Clinical Components
5) Information Systems

- 1) Does your system have ready access to:
 - a. Law enforcement crash and incident reports
 - b. Pre-hospital Care reports
 - c. Emergency department data
 - d. Acute care facility data including:
 - Trauma centers
 - Other acute care hospitals
 - Specialty centers, including burns and rehabilitation
 - e. Medical examiner/coroner reports
 - f. Death certificates
 - g. Payor records
 - h. Trauma Registry

Current data that is accessible includes Trauma Registry and death certificates (death certificate data and payor records are included in the Trauma Registry). The installation of the Medic! Program in each of the ambulance services will add the pre-hospital care report component. These three data systems form an integrated package for data linkage.

Additionally, efforts are underway to access and link data from sources a, b, c, e, f, and data linkage to include Medicaid information.

CURRENT STATUS:

At this point there is no readily available access to law enforcement crash and incident reports, pre-hospital care reports or emergency department data. There is no mandate at the State level for pre-hospital data collection. Due to problems with Medic! software collection, the collation of pre-hospital data has not been consistent. Death certificate data are available through the trauma registry. While cost data is available from the registry, this information appears to be collected only at larger institutions. Currently, only 13 of 52 institutions contribute data to the State Trauma Registry.

RECOMMENDATIONS:

- Priority should be directed to:
 - 1) Organization of pre-hospital data collection using currently available software, or if necessary, non-proprietary software until Medic! is available for use.
 - 2) Ensure that all hospitals receiving trauma patients collect and upload data to the State Registry.
 - 3) Smaller institutions with sufficiently fewer patients should collect and submit data in hard copy form if access to a hospital trauma registry is problematic.
 - 4) Cost data should be collected from all institutions, and again, submitted in hard copy form, if necessary.
 - 5) insurance companies/health care maintenance organizations have very accurate data regarding resource utilization and costs. Consideration should be given to obtaining an agreement from these payors to collect these data.
- Although crash data may not be readily accessible, detailed State crash records involving a death are usually submitted to NHTSA and collated in the Fatality Analysis Recording System (FARS) database accessible through NHTSA or their website (www.nhtsa.gov).

RATIONALE FOR RECOMMENDATIONS:

HL
•

For the purposes of resource allocation and quality assurance, It is critical to obtain as complete a data set as possible, both in terms of the extent of information collected (i.e., pre-hospital care, emergency department, hospital) and the breadth of data collection (all trauma patients in the State). The absence of pre-hospital data precludes assessment of action taken at the scene, transport times, and whether triage protocols were carried out correctly. Further, there is no way to assess how to allocate trauma resources if all hospitals caring for trauma patients do not submit information on these patients. Although Trauma Registry data from the larger volume centers is available for quality assurance purposes, no such data are available from the smaller centers where quality improvement may be far more critical.

If smaller institutions have insufficient resources to maintain a trauma registry, then submitting the necessary data in hardcopy form is appropriate. Given the small volume most of these centers are likely to see annually, this should not be too labor intensive.

Data obtained from FARS through NHTSA may allow comparison of fatal crashes in Montana with the rest of the country. Comparisons of this nature may help direct prevention programs pertaining to motor vehicle safety.

B. Operational and Clinical Components

5) Information Systems

2) Describe the population of patients that each database includes:

Law enforcement crash and incident reports
Montana Highway Patrol records

Pre-hospital Care reports

All pre-hospital care record of pre-hospital caregivers using Medic! Software. A limited subset of these data will be transmitted to the state database. The Montana Pre-hospital EMS Information Plan was developed in 1995 to outline collection and reporting methods for Montana pre-hospital caregivers (see appendix

Trauma registry – all major trauma patients from facilities who have committed resources and personnel for collection of data

State Trauma Register information includes:
Hospital trauma register data from participating facilities
Medical examiner/coroner reports
All trauma death certificates
Facility payor Records

Payor records
Medicaid

Facility Discharge Data Set

One area under consideration for inclusion in the 3rd year of the trauma grant is providing software to the 3 regional trauma centers to collect Emergency Department data elements.

CURRENT STATUS:

The status of many of these databases is described above. Currently, there is no readily available Facility Discharge Data Set although such data may be available from the Montana Hospital Association. Plans are underway to link Medicaid data with the Trauma Registry.

RECOMMENDATIONS:

- Recommendations are as mentioned in B.5.1. We encourage the State to work with the Montana Hospital Association to develop a Facility Discharge Data Set.

RATIONALE FOR RECOMMENDATIONS:

The rationale for a complete Data Set is described in B.5.1. A State Facility Discharge Data Set would be invaluable for capturing trauma patients not entered into the State Trauma Registry. The State, working closely with the Montana Hospital Association, can achieve this level of data collection and thereby improve the ability to identify the causes of injury in Montana.

B. Operational and Clinical Components
5) Information Systems
3) Which of the above databases are kept in computerized format?

All

CURRENT STATUS:

All the current databases are kept in computerized format.

RECOMMENDATIONS:

- No recommendations

RATIONALE FOR RECOMMENDATIONS:

B. Operational and Clinical Components
5) Information Systems
4) Which databases have a systemwide or (partial) standardized format or subset?

The committee that oversees the data linkage is determining the compatibility of the databases and the data elements.

CURRENT STATUS:

There is a software problem with the MEDIC! pre-hospital database, limiting its usefulness at the current time.

RECOMMENDATIONS:

- We encourage the State to work with the product's technical support team to deal with this problem as soon as possible.

RATIONALE FOR RECOMMENDATIONS:

Appropriate allocation of resources can not occur without easily accessible information regarding pre-hospital care.

B. Operational and Clinical Components
5) Information Systems
5) Which of the above databases can be linked?

This information is unknown at this time, but anticipate linkage of all databases. The Department of Public Health and Human Services is currently developing a comprehensive, integrated data system with a variety of participants. Prior to its completion, we plan to link EMS, Trauma Register, Highway Safety and Medicaid data.

CURRENT STATUS:

These databases have not yet been linked, but plans are underway to do so.

RECOMMENDATIONS:

- The State should develop a system such that cost data from a variety of sources (e.g. Medicaid and private insurers) can be linked to the Trauma Registry.

RATIONALE FOR RECOMMENDATIONS:

This approach will simplify the task of obtaining accurate, consistent cost data by limiting dependence on individual institutions.

B. Operational and Clinical Components
5) Information Systems
6) Do you gather E-Code data?

For the Trauma Registry and Medic programs only

CURRENT STATUS:

As it stands currently, E-code data are collected for only a small subset of trauma patients

- those who are entered into the Trauma Registry. As in most states, E-code data are also available from those who die as a result of trauma through death certificates and from the Hospital Discharge Data Set.

RECOMMENDATIONS:

- Use of external causes of injury coding (E-coding) for all trauma patients is important in identifying the causes of injury in Montana.
- E-codes should also be used in the Facility Discharge Data Set when this becomes available.

RATIONALE FOR RECOMMENDATIONS:

E-codes represent the ideal tool for assessing the incidence of injury by mechanism and thus are the only tool for guiding the development and implementation of injury prevention programs and gauging their success. Without such a mechanism, prevention programs are usually guided by injury events or deaths publicized in the local press. Typically, this results in the misdirection of injury prevention funds and ineffective prevention programs.

B. Operational and Clinical Components

5) Information Systems

7) Describe the role and responsibilities of agencies and institutions for collecting and maintaining the data.

The EMS and Injury Prevention Section in conjunction with the State Trauma Care Committee is responsible to determine the policies and procedures for collecting and maintaining data for the Trauma Register and Medic program.

Each of the other databases has oversight agencies or committees to determine the policies and procedures for collecting and maintaining their databases.

CURRENT STATUS:

There is appropriate designation of responsibility for collecting and maintaining data.

RECOMMENDATIONS:

- Consultation with other agencies or committees should be considered to ensure data linkage is possible. This may be particularly important for linkage of State crash records and the Facility Discharge Data Set with the Trauma Registry.

RATIONALE FOR RECOMMENDATIONS:

B. Operational and Clinical Components

5) Information Systems

8) How are the completeness, timeliness, and quality of the data monitored?

The Trauma System Coordinator and Medic Program Project Manager are responsible for education and validation of register data. A data validation study for Trauma Registry data is scheduled for completion during this grant year. Each of these programs has built-in capacity to accommodate data validation exercises that can be uploaded to a state validation database.

CURRENT STATUS:

Data quality has not yet been assessed. Plans are underway for a data validation study using a series of "dummy charts."

RECOMMENDATIONS:

- The State should be applauded for addressing the issue of data quality so early in the developmental phase of their trauma system. As additional institutions begin to use the Trauma Registry, repeated data quality assessments should be considered. Data audits should also be conducted during the hospital designation process when access to medical records is available.
- Include in data quality checks the accuracy and completeness of pre-hospital data collection.

RATIONALE FOR RECOMMENDATIONS:

The ability to "trust" the data is important to the development and maturation of the trauma system. Reliable data allow for system improvements at all levels and provide a mechanism to identify the systems strengths and weaknesses. It is important to emphasize data accuracy at the beginning of the system so that errors in collection are quickly identified and corrected.

B. Operational and Clinical Components

5) Information Systems

9) What are the standards for data collection and reporting from each data provider?

A pre-hospital EMS information plan guides the pre-hospital data collection effort. The data standards are those of the NHTSA Uniform Pre-hospital Data Set. Trauma register standards are those suggested by the CDC database with some additions.

CURRENT STATUS:

Appropriate standards are being followed.

RECOMMENDATIONS:

- No recommendations

RATIONALE FOR RECOMMENDATIONS:

B. Operational and Clinical Components

5) Information Systems

10) How is the confidentiality of the data ensured and monitored?

There is a department-wide data confidentiality policy concerning the release of data, and the trauma legislation protects the trauma register data from discovery. Physical procedures for assuring confidentiality are being drafted. Written policies for the release of trauma register data are also being drafted.

CURRENT STATUS:

There is standing legislation protecting the Trauma Registry data from discovery. Policies regarding confidentiality and release of Registry data are being drafted.

RECOMMENDATIONS:

- Through the State Attorney General's office, review the adequacy of the confidentiality provision of the current Statutes. If, in the opinion of the State Attorney General's office, the legislation is adequate, then that should suffice.
- Release of Trauma Registry data to research personnel should be contingent on a) submission of a written proposal outlining the use of these data b) approval by a State and/or institutional review board, and c) their signing a confidentiality agreement.

RATIONALE FOR RECOMMENDATIONS:

Legislation protecting the Trauma Registry and quality assurance data from discovery must be as complete as possible to ensure a free exchange of data and continuing quality improvement. Release of Trauma Registry data for the purposes of research should follow standards to safeguard the integrity of the data and to ensure that confidentiality is not breached. At the same time, information generic to the system and aggregated for public use should be made available for review and reporting.

B. Operational and Clinical Components

6) Evaluation

1) Describe the concurrent plan for evaluating the individual trauma system components and system operations. This plan should include quality improvement for EMS trauma centers, and so on. How does the system monitor compliance with system standards for each component - pre-hospital care facilities, acute care facilities, trauma center specialty centers, rehabilitation centers.

A comprehensive evaluation plan has not been established for system operations.

CURRENT STATUS:

A comprehensive statewide plan for evaluating trauma system components and system operations has not been formulated. Guidelines for developing a system-wide quality improvement process exists in draft form only (Appendix 4).

RECOMMENDATIONS:

- The quality improvement guidelines noted in Appendix 4, titled "Quality Improvement Plan", need to be formalized into a comprehensive plan for monitoring system components and system operations at the local, regional, and State levels. The plan should address, in detail, the goals and objectives for system monitoring; authority to monitor care; organizational and committee structure; key activities; information sources and data collection; evaluation standards (QI indicators and standards of care); reporting structure and mechanisms; confidentiality protection; and the roles and responsibilities of the hospitals, EMS agencies, State and regional boards, and the EMS and Injury Prevention Section.

RATIONALE FOR RECOMMENDATIONS:

The goal of a statewide trauma quality improvement program is to reduce inappropriate variation in care, and ultimately injury related death and disability, through progressive cycles of performance review, problem identification, corrective action, re-monitoring, and establishing new standards. This can only be accomplished after a statewide process has been established to monitor system components and system operations.

B. Operational and Clinical Components
6) Evaluation

- 2) Is there a quality improvement committee for the system? To whom does it report? Who reports to the committee?**

There is a multilevel Quality Improvement structure proposed:
RTAC QI Subcommittees ⇒ STCC QI Subcommittee ⇒ STCC

CURRENT STATUS:

A multilevel quality improvement structure has been proposed, but has yet to be adopted or implemented.

RECOMMENDATIONS:

- Adopt the proposed structure, and appoint a multi-disciplinary committee at each level.

RATIONALE FOR RECOMMENDATIONS:

The creation of a multilevel structure and appointment of a multi-disciplinary committee at each level is necessary before a comprehensive plan for monitoring system components and system operations can be developed.

B. Operational and Clinical Components
6) Evaluation

- 3) Is there a unified approach to quality improvement throughout the system?**

Each of the RTACS and the STCC will utilize the proposed Quality Improvement Plan. A statewide quality improvement system for all aspects of emergency medical services is under development.

CURRENT STATUS:

Although a system-wide trauma quality improvement plan has been drafted, it lacks detail and really only provides basic guidelines for developing a regional plan.

RECOMMENDATIONS:

- The STCC needs to develop a more comprehensive and detailed template for each region to use to develop its trauma quality improvement plan. The plan should, at a minimum, address the components noted in B.6.1.

RATIONALE FOR RECOMMENDATIONS:

Although there may be unique aspects to each region's approach to quality improvement,

a template needs to be established by the State/STCC to ensure that performance monitoring is standardized, and addresses all components of the trauma care system.

B. Operational and Clinical Components

6) Evaluation

- 4) How do the quality improvement programs for each component support the other elements of the system? (For example, does the quality improvement program for pre-hospital feed into the trauma center and back? Does quality improvement of trauma centers feed into acute care hospitals?)**

The structure of the RTACS and STCC lends itself to an integrated quality improvement program. However, much of the actual system is not formally developed and operational at this time.

CURRENT STATUS:

The quality improvement subcommittees at both the State and regional levels have yet to be appointed. The plan to appoint a multidisciplinary membership comprised of representatives from all aspects of the trauma care delivery system is appropriate.

RECOMMENDATIONS:

- In order to facilitate feedback, corrective action planning, and loop closure, each hospital, and if possible, each pre-hospital agency should participate in the regional quality improvement process. The template plan for quality improvement should address how committee findings will be reported to the agency or institution involved, and what the expectations for feedback, follow-up and loop closure are.

RATIONALE FOR RECOMMENDATIONS:

To ensure that the need for corrective action is communicated, and that the action plan itself is implemented, it is necessary to have a clearly established pathway for communication. This pathway is generally accomplished through participation on peer review committees.

B. Operational and Clinical Components

6) Evaluation

- 5) What group/body oversees the quality assurance for the whole system?**

STCC and the EMS and Injury Prevention Section

CURRENT STATUS:

Although the quality improvement process for the trauma system has yet to be implemented, the proposed plan to have the STCC and EMS and Injury Prevention Section provide direct oversight of the system will meet this standard.

RECOMMENDATIONS:

- Implement the organizational structure as proposed with State and STCC providing oversight to the statewide quality improvement process. Oversight responsibilities should be well defined in the state plan for trauma quality improvement and should reflect Statutory authority.

RATIONALE FOR RECOMMENDATIONS:

Establishing oversight through the proposed structure will facilitate standardization of the process and outcome measures.

B. Operational and Clinical Components

6) Evaluation

- 6) Are there standardized filters that each component of the system must audit and report to the system?**

These are yet to be determined by the STCC and RTACS.

CURRENT STATUS:

Standardized audit filters do not presently exist.

RECOMMENDATIONS:

- Appoint the STCC quality improvement subcommittee; charge this subcommittee with

the task of defining standardized audit filters for each component of the system.

RATIONALE FOR RECOMMENDATIONS:

Standardized audit filters help to define expectations for each component of the trauma system, and facilitate system monitoring.

B. Operational and Clinical Components

6) Evaluation

7) How does the system quality management program interface with trauma center quality management programs?

Quality management infers that there will be two-way communication that will foster quality improvement of patient care and improvement of the system that will start at the facility level and travel through the regional level to the state level. Additionally, quality management infers reciprocal communication from the state level either through the regional committee to the facility and/or directly to the facility level. This communication and open dialog will be fostered by encouraging individual facility involvement in the RTAC Quality Improvement committee as a requirement of the designation process.

CURRENT STATUS:

The proposed structure for State and region-wide quality improvement, and the requirement that designated trauma facilities participate in the regional quality improvement process should provide an excellent interface between the review levels.

RECOMMENDATIONS:

- The plan for monitoring trauma system components and system operations should address the roles and responsibilities of the regional committee, hospitals, and pre-hospital care agencies to participate in the review process and communicate information.

RATIONALE FOR RECOMMENDATIONS:

To accomplish the goal of continuous performance improvement, clear lines of communication and a mechanism for multi-level committee interface must be established.

B. Operational and Clinical Components

6) Evaluation

8) Does the trauma center designation process require trauma centers to demonstrate that they have established authority, responsibility, and organized structure for the quality management program?

Yes

CURRENT STATUS:

Administrative code requires designated trauma centers to maintain a comprehensive quality improvement program for trauma.

RECOMMENDATIONS:

- None

RATIONALE FOR RECOMMENDATIONS:

Because trauma care crosses multiple disciplines, the program must have the authority, structure, and responsibility to address issues that involve multiple departments.

B. Operational and Clinical Components

6) Evaluation

9) Is there a systemwide process for monitoring quality of care, including establishment of standard of care, concurrent review, systematic evaluation of audit filters for care review, multidisciplinary case review, and trending of patient-related data (including process and outcome indicators)?

This is included at the regional and state level as a part of the proposed Quality Improvement Plan and is a responsibility of the Quality Improvement Subcommittee at the RTAC and STCC.

CURRENT STATUS:

A comprehensive statewide plan for monitoring quality of care which includes standards

of care, audit filters, data trending, and case review has not been formulated. Guidelines for developing a system-wide quality improvement process exists in draft form only.

RECOMMENDATIONS:

- A system-wide process for monitoring performance improvement and quality of care should be adopted and implemented as soon as possible. The guidelines noted in the draft quality improvement plan need to be formalized into a comprehensive plan for monitoring quality of care. The plan should include standards of care, audit filters, data trending, and a case review process.

RATIONALE FOR RECOMMENDATIONS:

The goal of a trauma care system is to reduce injury related death and disability through injury prevention, education, and performance improvement. Continuous performance monitoring using a valid and objective process will identify opportunities to improve care and reduce variation in patient management. This can only be accomplished after a statewide process has been established to monitor system performance and quality of care.

B. Operational and Clinical Components
6) Evaluation
10) If there is no system wide process, provide examples from the trauma center quality assurance program.

NA

CURRENT STATUS:

N/A

RECOMMENDATIONS:

RATIONALE FOR RECOMMENDATIONS:

B. Operational and Clinical Components
6) Evaluation
11) What data are acute care facilities required to submit for the system quality improvement program?

State Trauma Register data elements: See Appendix 7

CURRENT STATUS:

The data elements required to be submitted to the Montana Trauma Registry are adequate to drive the State and region-wide quality improvement process. At present, however, data is inconsistently reported to the State.

RECOMMENDATIONS:

- Move forward with the plan for trauma system implementation, particularly trauma center designation and the establishment of a system-wide quality improvement process.
- Require participation in the quality assurance and data collection systems as part of the designation process.

RATIONALE FOR RECOMMENDATIONS:

Trauma center designation will increase data reporting, and require hospitals to participate in the system quality improvement process.

B. Operational and Clinical Components
6) Evaluation
12) If there is a system trauma registry, how does it contribute to the quality improvement?

The system trauma registry provides data that can be utilized to trend patient care and to evaluate the effectiveness of the system. Data can be reviewed either at a regional or state level to determine if the system or patient outcome is effected by the implementation of a policy or protocol or a change in available resources.

CURRENT STATUS:

Although the Trauma Registry provides data to the STCC and RTAC, it does not provide a true picture as to what is going on in the State in regards to trauma and has not been validated. At present, hospitals do not consistently report data, and the data that is submitted is not used for quality assessment purposes.

RECOMMENDATIONS:

- Implement a system-wide quality improvement program, and increase the reporting of data through designation of trauma centers. Data reported to the Trauma Registry should be validated during the hospital designation process.

RATIONALE FOR RECOMMENDATIONS:

Before Trauma Registry data can be used to drive the system quality improvement process, the data must be uniformly consistently reported and validated, and a plan for system monitoring must be in place.

B. Operational and Clinical Components 6) Evaluation 13) How have changes and incentives affected the care of the trauma patient, and what are the branching impacts of these changes?
Unknown

<u>CURRENT STATUS:</u> There is no process in place to measure the effectiveness or branching impacts of the trauma care system.
--

<u>RECOMMENDATIONS:</u> <ul style="list-style-type: none"> • Measure the effectiveness of the trauma system in reducing injury-related death and disability after full implementation of the system has occurred and stable funding has been secured.
--

<u>RATIONALE FOR RECOMMENDATIONS:</u> Measuring the effectiveness and branching impacts of the trauma system can not be adequately accomplished until all components of the trauma care system have been fully implemented.

B. Operational and Clinical Components 7) Research 1) Describe the process for gaining access to system data for research purposes?
The STCC has identified the need to develop a data request policy, and a committee will submit a draft proposal during the April meeting.

<u>CURRENT STATUS:</u> Data request policy is under development.
<u>RECOMMENDATIONS:</u> <ul style="list-style-type: none"> • Data must be available for valid research efforts.

<u>RATIONALE FOR RECOMMENDATIONS:</u> It is considered important that the data collected through the trauma system be made available for scientific analyses. Both to confirm the positive impact of trauma system development on patient outcome, and also to identify areas to develop new protocols in patient care practices that will improve and benefit the injured patient both within the State and throughout the country.
--

B. Operational and Clinical Components 7) Research 2) What funding does the system make available for research?
The EMS and IP Section has endeavored to include research projects in grant development and to assist investigators in the acquisition and evaluation of data. The current CDC trauma grant provides funding to the Critical Illness and Trauma Foundation for a replication of the 1992 Rural Preventable Mortality Study.

CURRENT STATUS:

The State is currently working with both the public and private sector in utilizing research monies to analyze trauma data and to address focused issues.

RECOMMENDATIONS:

- The State should continue to build on the past experience of working with the CIT Foundation and other agencies and organizations in utilizing the trauma data for research activities.
- Both the Department of Health monies and matching monies from private and public research grants should be coordinated to optimize analyses of trauma linked data.

RATIONALE FOR RECOMMENDATIONS: